

THE NORTHERN WORLD     BRILL

# Christian IV and his Navy

*A Political and Administrative History  
of the Danish Navy 1596-1648*



Martin Bellamy



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## CHRISTIAN IV AND HIS NAVY

# THE NORTHERN WORLD

North Europe and the Baltic c. 400–1700 AD  
Peoples, Economies and Cultures

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# CHRISTIAN IV AND HIS NAVY

*A Political and Administrative History of the  
Danish Navy 1596–1648*

BY

MARTIN BELLAMY



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*On the cover: Allegory of the Sound* by Isaac Isaaczs, 1622.

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## PREFACE

This study began as a simple enquiry into the role of the Scottish shipwrights who worked for the Danish navy. Its scope widened significantly when it transpired that not only had little work been done on the shipbuilders themselves, but also, despite its highly symbolic nature in terms of Danish national identity, very little serious scholarly work had been carried out on Christian IV's navy. My research resulted in a PhD at the University of Glasgow in 1997 which looked specifically at the careers of the shipwrights and included a rather technical analysis of their ship designs. Their work was also placed within the political and administrative apparatus of the Danish navy.

In the last decade or so there has been a growing interest in the role of navies in state building. The groundbreaking works of Jan Glete have been followed up by studies into the early modern English, Spanish and French navies. It is now time that the Danish navy, whose influence in early modern naval power has been long overlooked, takes its rightful place on this stage. This book is therefore a re-casting of the original PhD, but with an emphasis very much on the political and administrative functioning of the navy and its role in Danish state building.

Many individuals and institutions provided me with guidance and support in the preparation of the PhD. My biggest debt was to my supervisors, Dr Thomas Munck and Dr Brian Dietz, whose enthusiasm played a great part in transforming a limited research project into its final form. Dr Munck's knowledge of seventeenth century Danish also proved invaluable and saved me from many blunders in translation. Niels M. Probst of the Danish Naval Museum was also very generous in sharing with me his considerable knowledge of the technicalities of shipbuilding during the reign of Christian IV. Without the enthusiasm and generosity of Henning Aarup the research could never have been completed and the original PhD was therefore dedicated to his memory.

For financial help I was indebted primarily to Thomas Aarups Mindefond who supported me throughout the PhD and ensured that I was able to visit Copenhagen on a regular basis. The Royal

Historical Society, The University of Glasgow Faculty of Arts, the Danish-British Cultural Fund and DFDS also contributed generously to my considerable travelling expenses.

Numerous archives and libraries also provided me with valuable support. In particular I would like to thank the staff of the Rigsarkiv and the Royal Library in Copenhagen for their patience and good humour in providing me with a constant stream of obscure material. Also deserving of thanks are: The British Library and the National Maritime Museum Library in London; Marinens Bibliotek in Copenhagen; the Bodleian Library and the archives of Corpus Christi College, Oxford; the National Library of Scotland; and of course the University of Glasgow Library.

In terms of transforming the PhD into this book I would firstly like to thank Rose Tremain. Reading her novel on Christian IV, *Music and Silence* (1999), which mentions the Scottish shipbuilders in passing, whilst on holiday in Oslo surrounded by so many reminders of Christian IV, re-ignited my passion for the subject and fuelled my determination to publish the real story. I would also like to thank Richard W. Unger for his support in encouraging me to publish and introducing me to Brill and the Northern World series. However, my biggest debt of gratitude must go to Jan Glete who unselfishly shared his knowledge and data on the Baltic navies and provided many useful and detailed comments on the manuscript. Without his help this book would have been much the poorer. Niels M. Probst also once again generously shared new knowledge and data. Thanks also go to my colleagues in Glasgow Museums, Michael Nix who made useful comments on some of the early drafts and Robert Wenley who helped decipher the iconography of Isaacsz's *Allegory of the Sound* for me. As ever, though, I accept full responsibility for any errors or omissions in the book.

At home I would like to thank my wife for her great forbearance in living with a nocturnal academic who was trying to write a book and hold down a busy day job at the same time. This book is therefore dedicated to Susan and my son Finn.

## STYLISTIC CONVENTIONS

Various conventions have been used throughout the book. To limit any confusion the Danish titles of officials and institutions have been used. When first introduced these are explained and given an, often approximate, English translation. The Danish form of proper and place names have also been used, apart from Copenhagen which has been preferred to København, except when citing Danish language publications. Some Danish terms are also more eloquent than their English counterparts and have been used to simplify the text, for example *Kejserkrig* is used instead of ‘the Danish involvement in the Thirty Years War’. The council of the realm is referred to throughout as the *rigsråd* and I prefer the original *len* for the local administrative areas rather than fief or domain, which are sometimes used as translations. The official in charge of a *len* is called a *lensmand* (singular) or *lensmænd* (plural). Christian IV’s eldest son and elected successor died in 1647 and never took the throne. He is traditionally referred to as Prince Christian (V) and I have followed this tradition.

The translation of some seventeenth century texts can be a challenge. In some cases it is impossible to give a precise translation and in these cases I have given a looser version for the sake of clarity, while still preserving the meaning of the original. I have generally refrained from including sections of the original texts, except when they are in English, as I suspect they would only serve to confuse most readers and interrupt the flow of the book.

The original units of measurement have been retained when quoting from original sources, but where possible the S.I. equivalent is also given. During the period of this study Denmark used the Julian calendar. The dates on original documents have been left unchanged. The Danish monetary system saw many changes throughout Christian IV’s reign and they are discussed at length in Chapter three. The *rigsdaler* is generally taken as £0.25 sterling during this period, although inflationary fluctuations did have an effect, particularly in the latter part of Christian IV’s reign. To avoid complication no attempt has been made to convert any currencies.



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## INTRODUCTION

Christian IV is Denmark's equivalent of Henry VIII of England, a grand, domineering king who is remembered for his drinking, his womanising and his navy. Like Henry VIII, a great deal of mythology has grown around this larger than life monarch. Perhaps the most famous image of Christian IV is as the warrior king on the deck of his flagship, valiantly leading his navy after being blinded in one eye. Many artists have depicted this scene and a mural of it provides a dramatic backdrop for his sarcophagus in Roskilde Cathedral. It also forms the opening verse to the Danish national anthem *King Christian stood by Lofly Mast*, and his bloodstained clothes from the battle are preserved as national relics at Rosenborg Castle.<sup>1</sup> Successive generations of Danes, in the face of military defeat and a steady contraction of national boundaries, have looked back in admiration at the great age of Denmark and at the king who heroically fought to save his country. However, very little serious scholarly work has been carried out on Christian IV's navy and it has been romanticised to such a degree that it has been difficult to tell myth from reality.

The first historians of the Danish navy were naval officers and their work is coloured by overt patriotism and professional pride. The first dedicated history of the navy came in 1818 from W. Graah, a naval lieutenant who openly admitted that he was aiming to put the Danish admirals on a par with those from England, France and Holland.<sup>2</sup> A more thorough history came from a naval captain, Hans Georg Garde, in 1832, but although he consulted a large amount of source material he did not fully understand the state administration of the period or the sources that it produced.<sup>3</sup> His interpretation was therefore often inaccurate and his figures frequently meaningless. His revised version of 1861 was much better although

---

<sup>1</sup> Denmark has two national anthems. *King Christian* is usually used as the royal anthem.

<sup>2</sup> W. Graah, *Udkast til Danmarks søekrigshistorie*, (København, 1818).

<sup>3</sup> H. G. Garde, *Efterretninger om den danske og norske Sømagt*, (København, 1832), I–IV.

it was still imbued with a romantic notion of the navy and it perpetuated many of his mistakes and misapprehensions.<sup>4</sup> Another history was published in 1875 by J. C. Tuxen, a teacher at the naval academy, who sought to provide a popular account of the navy's history.<sup>5</sup> He reiterated the patriotism evident in the earlier works and provided little new in the way of interpretation.

These works were all general surveys of the Danish navy from earliest times to their date of publication. The first work to look specifically at Christian IV's navy came from the pen of a remarkable priest by the name of H. D. Lind who, between 1882 and 1924, published over 30 books and articles on the early modern Danish navy. His book on Christian IV and his dockyard was his first and, although very impressive in the amount of information that it contains, has some major flaws.<sup>6</sup> Lind's grasp of the source material was much better than Garde's, but he still made some mistakes in interpreting the political and administrative background to the navy. His approach was essentially genealogical and the majority of the book consists of biographical details of naval officers and master craftsmen. Where he does attempt to give some historical perspective he is clearly influenced by the aura of Christian IV as a great monarch and his analysis is uncritical and frequently naive. His genealogical approach also means that he concentrated on the higher echelons of the navy and virtually ignored the common seamen and craftsmen.

The only professional historian in the nineteenth century to investigate Christian IV's navy in any depth was Christian Bruun. His major work was a biography of the admiral Cort Adeler and, although his subject did not join the Danish navy until the 1660s, Bruun provides some interesting background from the reign of Christian IV.<sup>7</sup> He also published accounts of two of the major sea battles of Christian IV's reign, which, for the first time, began to strip down some of

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<sup>4</sup> H. G. Garde, *Den dansk-norske Sømagts Historie 1535–1700*, (København, 1861). This was a companion volume his *Den dansk-norske Sømagts Historie 1700–1814*, (København, 1852).

<sup>5</sup> J. C. Tuxen, *Den danske og norske Sømagt fra de ældste Tider indtil vore Dage*, (København, 1875).

<sup>6</sup> H. D. Lind, *Kong Kristian den Fjerde og hans Mænd paa Bremerholm*, (København, 1889).

<sup>7</sup> Christian Bruun, *Curt Sivertsen Adelaer*, (København, 1871).

the myths of Christian IV as a great admiral and shed light on the real history of his navy.<sup>8</sup>

In the twentieth century many articles were published on various aspects of Christian IV's navy, such as the development of the dockyards, naval strength, and various aspects of naval administration.<sup>9</sup> The most comprehensive work has been carried out by Niels M. Probst, whose interest in the technical details of shipbuilding and in the pictorial evidence of ship paintings has provided the most detailed analysis of the navy's ships to date.<sup>10</sup> However, although these articles have helped to build up a more accurate picture of Christian IV's navy, its political and administrative importance has still not yet been addressed in any detail. The only book that provides a general survey of Christian IV's navy during the whole reign was published as recently as 1996. Niels M. Probst's *Christian 4.s flåde* does provide an accurate outline of the political and administrative context, but it is primarily concerned with naval operations and military hardware.<sup>11</sup>

The fact that Christian IV's navy plays such an important role in popular Danish history and national identity makes it strange that so little has been written on its wider significance. It is even more surprising given the major debate and reappraisal of Christian IV's kingship over recent years and that the navy played such an important role in shaping his foreign and domestic policies. This lack of any comprehensive survey of the political and administrative background to Christian IV's navy can be seen in the work of contemporary historians of early modern Denmark, who have tended to

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<sup>8</sup> Christian Bruun, *Slaget paa Kolberger Heide den 1. juli 1644 og de efterfølgende Begivenheder*, (København, 1879); 'Christian IV i Listerdyb', *Danske Samlinger*, VI (1871), 263–86.

<sup>9</sup> Knud Klem, 'Christian IV og Bremerholm', *Handels- og Søfarts Museets Årbog*, 1977, 95–6; Ole Lisberg Jensen, 'Bremerholm eller Gammelholm', *Marinehistorisk Tidsskrift* (3/1988); P. Wessel-Tolvig, 'Holmen og København. En beskrivelse af flådestationens betydning for byens udvikling, beskæftigelse og handel', *Historiallinen Arkisto*, 92 (1988), 89–107; Preben Holck, 'Flaadelister omkring Krigsaarene 1644–45', *Tidsskrift for Søvesen*, 114, 1943, 483–504 & 545–65; Jørgen H. Barfod, 'Norske defensionskibe og deres udrustning under Torstenssonfejden', *Handels- og Søfartsmuseets Årbog*, (1948), 99–129; Steffen Heiberg, 'Søetatens økonomiske forvaltning under Christian IV', *Marinehistorisk tidsskrift*, (1/1980), 8–18; F. S. Grove-Stephensen, 'Marinens jurisdiktionsforhold før 1660', *Marinehistorisk tidsskrift*, (2/1984), 19–31.

<sup>10</sup> See the bibliography for a full list of articles.

<sup>11</sup> Niels Probst, *Christian 4.s flåde, 1588–1660*, (København, 1996).

rely heavily on the flawed and outdated works of Garde and Lind, thereby perpetuating their mistaken premises and meaningless figures.<sup>12</sup>

Much of the history of Denmark and of Christian IV has, quite naturally, been written in Danish, limiting its accessibility. As a consequence Denmark was for a long time overlooked or misinterpreted in English language publications. This situation has steadily been changing since the 1990s and a number of key works have offered a much better understanding of the role of Denmark in early modern Europe.<sup>13</sup> Jan Glete has also provided English-speaking readers with an insight into the Danish navy in terms of its relation to Sweden and wider discussions on naval warfare in the Baltic,<sup>14</sup> but there has never before been a study of the early modern Danish navy in English.

This book therefore aims to provide readers with an introduction to the Danish navy during the critical period covered by the reign of Christian IV. It is primarily a study in naval policy and administration. Studies of this nature are common for eighteenth and nineteenth century navies,<sup>15</sup> but are still relatively rare for sixteenth and

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<sup>12</sup> For example Askgaard, Jespersen and Tandrup all use figures and assumptions based on Garde and Lind: Finn Askgaard, *Christian IV: Rigets væbnede Arm*, (København, 1988); Leon Jespersen, 'The Machtstaat in Seventeenth-century Denmark', *Scandinavian Journal of History*, 10 (1985), 271–304; Leo Tandrup, *Mod triumf eller tragedie*, (Aarhus, 1979), I–II.

<sup>13</sup> Thomas Munck, *Seventeenth Century Europe: State Conflict and the Social Order in Europe 1598–1700*, (Basingstoke, 1990); Stewart P. Oakley, *War and Peace in the Baltic 1560–1790*, (London, 1992); David Kirby, *Northern Europe in the Early Modern Period: The Baltic World 1492–1772*, (London, 1990); Paul Douglas Lockhart, *Denmark in the Thirty Years' War, 1618–1648: King Christian IV and the Decline of the Oldenburg State*, (London, 1996) and *Frederik II and the Protestant Cause: Denmark's role in the wars of religion 1559–1596*, (Leiden, 2004); Robert I. Frost, *The Northern Wars: War, State and Society in Northeastern Europe, 1558–1721*, (Harlow, 2000); Steve Murdoch, *Britain, Denmark-Norway and the House of Stuart, 1603–1660*, (Edinburgh, 2001); Knud J. V. Jespersen, *A History of Denmark*, (Basingstoke, 2004).

<sup>14</sup> Jan Glete, *Navies and Nations: Warships, Navies and State Building in Europe and America, 1500–1860*, (Stockholm, 1993); *Warfare at Sea, 1500–1650: Maritime conflicts and the transformation of Europe*, (London, 2000); 'Naval Power and Control of the Sea in the Baltic in the Sixteenth Century', in J. B. Hattendorf & R. W. Unger (eds), *War at Sea in the Middle Ages and the Renaissance*, (Woodbridge & Rochester NY, 2003); 'Amphibious Warfare in the Baltic, 1550–1700', in D. J. B. Trim and Mark Charles Fissel (eds), *Amphibious Warfare 1000–1700: Commerce, State Formation and European Expansion*, (Leiden, 2006).

<sup>15</sup> For example: Daniel A. Baugh, *British Naval Administration in the Age of Walpole*, (Princeton, 1965); and James Pritchard, *Louis XV's Navy, 1748–1762: A Study of Organization and Administration*, (Kingston & Montreal, 1987).

early seventeenth centuries. They do include Michael Oppenheim's pioneering, but now flawed, study of the English navy and David Loades' re-interpretation of it, Jaap Bruijn's overview of the Dutch navy and recent works by David Goodman and Alan James on the Spanish and French navies.<sup>16</sup> Christian IV's navy can therefore be placed within this overall context and hopefully this study will further enhance the understanding of early modern European naval administration.

The main areas of focus in this book are therefore the development of the navy and its infrastructure, its political and administrative workings, and the relationship between the navy and the state. To that end it has also been necessary to provide some background to the workings of the Danish state and the political framework within which the navy operated. Naval operations are discussed where relevant, but this is not intended to be a detailed account of where and when the navy sailed, or a blow-by-blow analysis of the intricacies of naval battles. To a certain extent this information is available elsewhere.<sup>17</sup>

The sources available to investigate the Danish naval administration before 1655 are uneven and often difficult to interpret, which partly explains why such a study has never been attempted before. The dockyard accounts, which record the supply of materials, victuals and ordnance, have survived for only a number of discreet years and it is rare to find more than one type of account for the same year to enable cross-referencing. The method of accounting for both the dockyard and the state finances was idiosyncratic to say the least, as readers will discover in Chapter Three. Thankfully the protocols and outgoing correspondence of the major state chancelleries have largely survived intact for the entire period and these provide the most consistent evidence. However, they are often only written in summary form and offer a tantalising glimpse of records that have

---

<sup>16</sup> Michael Oppenheim, *A History of the Administration of the Royal Navy 1509–1660*, (London, 1896); David Loades, *The Tudor Navy: An administrative, political and military history*, (Aldershot, 1992); Jaap R. Bruijn, *The Dutch Navy of the Seventeenth and Eighteenth Centuries*, (Columbia, SC, 1993); David Goodman, *Spanish Naval Power, 1589–1665: Reconstruction and defeat*, (Cambridge, 1997); Alan James, *The Navy and Government in Early Modern France, 1572–1661*, (Woodbridge, 2004).

<sup>17</sup> As well as the works of Jan Glete the following give English readers an insight into Danish naval operations: R. C. Anderson, *Naval Wars in the Baltic 1522–1850*, (London, 1910); Niels M. Probst, 'Naval Operations during the Torstensson War, 1643–45', *Revue Internationale D'Histoire Militaire*, 84, (2004).

long since been destroyed. Another extremely valuable source is the voluminous correspondence of Christian IV, which has been extensively published. His letters contain a wealth of information on naval matters and it is largely because he interfered with the naval administration to such an extent that makes it possible to study it in such detail. In all there are more than 3000 letters, mostly dating from the 1620s onwards, ranging from simple one-line notes to extensive diplomatic correspondence. The range of interests discussed is phenomenal and the king's obsession with trivial matters shines through. The majority of letters demonstrate a rapid flow of ideas that were put to paper without any structure, so that domestic household issues are frequently discussed alongside international diplomacy, and they are extremely difficult to interpret without to some extent entering the mind of Christian IV. This study is therefore an attempt to piece together the naval administration in spite of the large-scale losses of detailed administrative sources.

The one over-riding factor that dominates the navy at this time is the overwhelming influence of the king. He was involved at all levels of the functioning of the navy: he formulated the policies which determined the uses to which it was put; he dictated the number of ships to be built and closely monitored their design and construction; he supervised the development of the dockyard; he took overall control of its administration and attempted to do the same with its finances; and he personally commanded the ships in battle. Few, if any, other monarchs in the early modern period had such an overwhelming influence over their navy.

With Christian IV's driving ambition the Danish navy grew to be one of the largest state-owned navies in Europe. In part its size was determined by geography, but Christian IV's views of his own prestige and royal reputation also played a major role. The Baltic was naturally the area where the navy had its greatest influence and in the early part of his reign Christian IV was able to claim dominion over most of the Baltic. The rise of Sweden saw this position severely threatened and through a mixture of bad diplomacy, bad judgement and bad luck he ultimately lost most of Denmark's influence in the Baltic to his neighbour.

In terms of hardware and infrastructure the Danish navy was one of the best in Europe. The best shipwrights and dockyard engineers were brought to Denmark to create a navy whose ships were well designed and whose dockyard provided for their every need. Christian



IV's sense of grandeur, his love of detail and obsessive nature found their natural expression in these building works. They also found expression in the development of a detailed administrative structure for the lower levels of the civil and military sides of his navy.

Where reform was really needed was in the higher levels of administration. At the heart of the problem was the dyarchic system of government where political control of the navy became a highly contentious issue between the king and the Council of the Realm, the *rigsråd*. The Council recognised the need for a strong navy but wanted it to remain a purely defensive force. In contrast Christian IV saw the navy not just as a form of state defence, but also as his own personal possession that he could use as the means of foreign expansion and of furthering his own influence.

Christian IV's belief that the navy was his own possession, rather than an instrument of the state, was reinforced by the confused nature of naval finance. Wrangling over money proved to be the real threat to the effective running of the navy. Naval finance became an emotive issue in the struggle between king and Council over the need to reform the Danish political and administrative system. Ironically, it was the semi-feudal nature of Danish society that kept the navy going in the years of deep financial crisis, with victuals, men, building materials and eventually whole ships being supplied from the Crown lands at little direct cost to the central administration.

This climate of antagonism and hostility led to Christian IV's extreme distrust of delegation. He simply could not bear to think that he was losing control of any area of government. He made his position in the running of the navy indispensable so that there was no possibility of losing any political control, but as a result he created a system that could not cope effectively in his absence. Christian IV liked to think of himself as a warrior king who could personally save the nation from any threat. In practice his strategic and tactical thinking was often poor, and the blame for the navy's defeat in the war with Sweden in 1644 can be placed firmly on his shoulders.

This study will show that the Danish navy was largely Christian IV's own creation, and in many ways it reflected his own character. It was large, it was impressive, and it consumed vast amounts of money, but ultimately it proved to be ineffectual and ended in humiliating defeat.



## CHAPTER ONE

### THE ROLE OF THE NAVY

Before we can understand the development of the Danish navy we first need to define exactly why Christian IV needed, or wanted, a navy. To a certain extent the answer is obvious. The lands over which he governed were separated by the sea and the sea provided the primary means of communication between them. A navy was therefore needed to protect these lines of communication and provided the primary means of defending the lands from attack. In fact it has been said that Denmark-Norway, more than any other state in Europe, was dependent on her navy for survival.<sup>1</sup> But defence was only one aspect of the navy's role. It was also used to impose sovereignty, and therefore tolls, on both the Baltic and northern seas. It played a mercantilist role in developing the economy through participating in and protecting maritime trade. Christian IV also used it symbolically as a way of enhancing his own prestige, both internationally and domestically.

#### *The Dominion of the Baltic Sea*

The primary aim of Christian IV's navy was without question to maintain the Danish claim to the *dominium maris Baltici*, the dominion of the Baltic Sea. This was important for two reasons. The first was money. Revenues from the Sound Tolls formed the backbone of the Danish monarchy's wealth. The second was political. The rise of England and the Netherlands as maritime powers in the sixteenth century, and their reliance on naval stores from the Baltic, gave Denmark an increased economic and political weight in European affairs.

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<sup>1</sup> Jan Glete, 'Amphibious Warfare in the Baltic, 1550–1700', in D. J. B. Trim and Mark Charles Fissel (eds), *Amphibious Warfare 1000–1700: Commerce, State Formation and European Expansion*, (Leiden, 2006), 138.

The foundations of Danish claims to Baltic sovereignty lay in the break up of the Kalmar Union. The Union kings had begun to make claims on sovereignty of the Baltic Sea, but when the union began to break up both Denmark and Sweden competed for these claims. Danish naval power therefore had its origins in the long struggle with Sweden about the future of the Union, especially in the decades around 1500, when the Oldenburg monarchy established a navy. Swedish claims to Baltic sovereignty had to wait until the Vasa monarchy before they had any substance, although Lübeck often intervened as a powerful ally to the separatist groups in Sweden.

However, despite possessing substantial coastal territories, Denmark could not become a significant maritime power while the Hanse controlled virtually all maritime trade in the Baltic. A significant change came in the late fifteenth century when the arrival of Dutch and English traders in the Baltic saw the influence of the Hanse wane. This fragmentation of commercial power enabled Denmark to impose heavy tolls on shipping passing through the Sound. Danish naval strength therefore needed to increase, firstly in order to impose the tolls in the first place, but also because the legitimisation of these tolls was based on the fact that they were used to finance the protection of shipping in the Baltic and so a strong navy was required to provide that protection.

The Kalmar Union was ended for good in 1523 when Christian II was deposed and separate kings were elected in Sweden and Denmark-Norway. Both Gustav Vasa in Sweden and Frederik I in Denmark had risen to power as allies of Lübeck. However, the power of the Hanse was now in decline. Under their new monarchs both Sweden and Denmark had substantially increased their power, partly as a result of the ecclesiastical reforms, which ultimately led to reformation and the large-scale confiscation of church property. The growth of Danish and Swedish navies also meant that they no longer remained dependent on the Hanse for protection.

The power of the Hanse was further diminished after the rather confusing conflict known as The Count's War (1534–36), which was part Danish civil war and part Baltic power struggle. The death of Frederik I sparked a war of succession when the council refused to elect his son, the Lutheran Duke Christian of Holstein. The burghers revolted against the nobility and Lübeck, seeing an opportunity to regain maritime supremacy in the Baltic, sided with them, using the imprisoned Christian II as a figurehead. Gustav Vasa feared the

consequences of a Lübeck victory for Sweden so rather than siding with his traditional ally he joined the conflict on the side of Count Christian. He had strong reasons for doing so as they were brothers-in-law, fellow Lutherans and avowed enemies of Christian II. The end result was a victory for Gustav Vasa and Duke Christian, who became King Christian III. Denmark and Sweden now shared control of the Baltic and maintained a special relationship, which saw them respect each other's right to have a navy and to conduct free trade between the two countries.<sup>2</sup>

Control of the Sound and her territorial possessions made Danish claims to the *dominium maris Baltici* in the western Baltic entirely justified, but her position in the eastern Baltic was much more tenuous. Denmark had owned land in Estonia, but this had been ceded as far back as the fourteenth century. The impending collapse of Livonia in the 1550s, however, brought to a head the struggle for naval dominion in the eastern Baltic. Denmark bought back the island of Øsel (Saaremaa) and a small foothold on the Livonian mainland, while Sweden, Poland and Muscovy fought over the remaining lands. Sweden's eastern expansion and growing claims for the *dominium maris Baltici*, particularly in the Gulf of Finland, were worrying for Denmark.

Denmark's aims during the Nordic Seven Years War (1563–70) were essentially a defence of Danish interests in the face of Erik XIV's more or less unlimited ambitions. He had increased his army and navy, raised demands on Danish territories, massively increased his naval and military resources in the eastern Baltic and was pursuing an ambitious dynastic policy. The Danish king, the newly elected Frederik II, had to react and formed an alliance with Lübeck and Poland, who were both already at war with Sweden. He hired a mercenary army and increased his naval strength with German armed merchantmen. Both the alliance system and the impossibility of keeping an expensive army for a long period forced him to do

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<sup>2</sup> Jan Glete has significantly advanced our understanding of naval warfare in the Baltic in the sixteenth century. Jan Glete, *Warfare at Sea, 1500–1650; Maritime conflicts and the transformation of Europe*, (London, 2000), 120–24; 'Naval Power and Control of the Sea in the Baltic in the Sixteenth Century', in J. B. Hattendorf & R. W. Unger (eds.), *War at Sea in the Middle Ages and the Renaissance*, (Woodbridge & Rochester NY, 2003); *Power through Organisation: Naval policy and administration in the age of Swedish empire-building in the Baltic, 1521–1721*, (provisional title), forthcoming. I am grateful the author for supplying an early draft of this last work.

something and so he began offensive operations. The only possible alternative, a renewed alliance with Sweden, including a broad agreement on spheres of interests in the Baltic, was blocked by the ambitions of the two young kings.

The war at sea proved disastrous for Denmark, and Sweden was able to defeat the combined fleets of Denmark and Lübeck time after time. The almost complete destruction of the Danish fleet in a storm in 1566 effectively rendered Sweden the master of the Baltic. Despite Sweden gaining naval mastery a civil war in Sweden and Danish gains in the land campaign, meant that the resultant peace treaty proved much more favourable to Denmark.

There are two contradictory opinions about Danish-Swedish relations in the period after 1570. The traditional view is that the two countries were inveterate archenemies and the Treaty of Stettin was more of a formal cease-fire than a true peace treaty, making a further outbreak of hostilities inevitable at some stage. However, recent research suggests that the period is dominated by more relaxed relations when both sides concentrated on other questions and there is a period of more than 20 years when there were no serious conflicts between Denmark and Sweden.<sup>3</sup>

Frederik II abandoned all pretension of further expansion in Estonia in the 1570s. He sold his possessions in Courland to Poland in the 1580s and abandoned his former ally Lübeck to its fate when Sweden did not fulfil its obligations in the Stettin treaty. Sweden initially built up her navy after the war, but with her priorities now firmly in the eastern Baltic and the peace with Denmark seemingly secure the character of the Swedish navy changed. The sailing navy was reduced while investment went into building up a large fleet of galleys that were more suited to operations against Russia. Meanwhile Frederik II set about strengthening his sailing navy and the dockyard in Copenhagen. He also built the castle of Kronborg, at the entrance to the Sound, partly to signal that Denmark was now undisputed master of the western Baltic and partly in response to a perceived threat of a multinational Catholic attack.<sup>4</sup>

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<sup>3</sup> Leo Tandrup offers the more traditional view while Frede P. Jensen provides a valuable re-assessment. The works of Jan Glete, Niels M. Probst and Michael M. Mortensen all support the thesis that there was no continuous tension or arms race. Leo Tandrup, *Mod triumf eller tragedie*, (Aarhus, 1979), I, 62; Frede P. Jensen, *Danmarks konflikt med Sverige 1563–1570*, (København, 1982).

<sup>4</sup> Paul Douglas Lockhart, *Frederik II and the Protestant Cause: Denmark's role in the wars of religion 1559–1596*, (Brill, 2004), 143.

The quest for domination of the Baltic was no vain geopolitical pursuit. The levy of tolls on the vast volume of shipping passing through the Sound provided the Danish monarchy with massive financial resources which could be used without any authorisation from the *rigsråd*. The basis for the right to levy these tolls was that the Sound was regarded as a 'stream' passing through Danish territory. Although this was a rather dubious claim even Grotius, the champion of the *Mare Liberum*, acknowledged that enclosed seas and straits occupied on both shores could be regarded as sovereign territory, and tolls charged accordingly.<sup>5</sup> The Sound tolls were first imposed in the 1420s and as Dutch and British trade grew through the sixteenth century their value steadily increased. In 1567 Frederik II altered the assessment of levies from the ships themselves to their cargoes, which virtually trebled the revenue within the space of a year.<sup>6</sup> Foreign merchants were prepared to pay these tolls, or protection money as Glete calls them, as the Danish navy effectively patrolled the Baltic and its approaches to make them safe from piracy.<sup>7</sup>

Although Denmark's naval strength had diminished slightly during the minority government (1588–1596), this was the situation inherited by Christian IV. The Hanse had been ousted from their dominant position, Sweden's once victorious navy had radically changed in character, and Denmark was reaping the benefits of the Sound tolls. However, Swedish gains in Livonia and the prospect of a united Polish-Swedish state pointed to the storm clouds gathering over Denmark's Baltic domination. But, for the moment, with the possession of the strategic line of islands of Bornholm, Gotland, and Øsel stretching between Sweden and the continent, Denmark could be considered the undisputed master of the Baltic Sea.

But this situation did not last long. Sweden's eastern expansion continued and she gained permanent control of Estonia and Narva in 1595. The succession of Sigismund, king of Poland-Lithuania, to the Swedish crown in 1592 also had an impact on Denmark's position in the Baltic. Rather than uniting Sweden and Poland, this occasioned a civil war in Sweden and a bitter war between the two

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<sup>5</sup> T. W. Fulton, *The Sovereignty of the Sea*, (Edinburgh, 1911), 347–50.

<sup>6</sup> David Kirby, *Northern Europe in the Early Modern Period: The Baltic World 1492–1772*, (London, 1990), 99.

<sup>7</sup> Glete also argues that this protection also influenced the development of unarmed merchant vessels, which increased profitability and led to the expansion of Baltic trade. Glete, *Warfare at Sea*, 125.

countries and the subsequent privateering and blockading by Sweden and Poland significantly affected Denmark's toll revenues. Also affecting Sound toll revenues was the free trade agreement between Denmark and Sweden, dating from the time of Hanse domination. Initially this exemption from paying Sound tolls made little impact since most of Sweden's comparatively negligible trade went via the southern Baltic ports. However from around 1600 her exports of iron, copper and forest products through the Sound steadily increased and Christian IV did not take kindly to this perceived loss of revenue.

From the very start of his reign Christian IV was clearly bursting to take on Sweden. He hoped to declare war a number of times, but the *rigsråd* always stuck to the terms of the Treaty of Stettin and sought to resolve conflicts through border negotiations. However, when Karl IX seized power in Sweden in 1599 he began to pursue an ambitious expansionist policy and significantly increased his military and naval strength. Sweden's territorial gains in the eastern Baltic and the subsequent disruption of trade there, and the issue of Sound toll exemption, were serious concerns for Denmark, but relations deteriorated to breaking point when Karl IX began to aggressively encroach on Danish rights in Finnmark. By 1611 Christian IV had lost patience and rashly threatened to declare war as Duke of Holstein if the *rigsråd* did not agree to war, but even they felt that Karl IX had gone too far and the permission was forthcoming.<sup>8</sup>

The much strengthened Danish navy proved a valuable tool in the ensuing Kalmar War (1611–1613). Although Sweden had invested in building up a sailing fleet again it was ill prepared for war. The Danish navy was able to swiftly impose blockades on Älvsborg and Kalmar, where a quarter of the Swedish fleet lay. When the two castles fell into Danish hands, the Swedes, rather than seeing their ships get into Danish hands, scuttled them and Denmark gained naval superiority for the rest of the war.

Despite Danish success at sea the land campaign reached a stalemate in what Robert Frost termed a 'grim war of mutual devastation'.<sup>9</sup> The young Gustav Adolf inherited a kingdom at war on three

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<sup>8</sup> Part of the *rigsråd's* reluctance to declare war was based on a fear that they would be drawn into a religious conflict with Poland. Esben Albrechtsen, Karl-Erik Frandsen & Gunner Lind, *Danmarks Udenrigspolitik Historie I: Konger og krige 700–1648*, (Copenhagen, 2001), 378–85.

<sup>9</sup> Robert I. Frost, *The Northern Wars: War, State and Society in Northeastern Europe, 1558–1721*, (Harlow, 2000), 136.



fronts and with the advice of his chancellor, Axel Oxenstierna, he sued for peace with Denmark to concentrate on Sweden's campaigns in the east.<sup>10</sup> Christian IV had initially dreamed of conquering Sweden and re-creating the Kalmar Union, but this was a political and military impossibility. Sweden was inherently the stronger state and was able to successfully wage war on two fronts. The idea of a union also had no support in either Sweden or Denmark, not to mention other powers in northern and western Europe who would have felt threatened. The resultant Knærød peace treaty may therefore have left Christian IV disappointed with respect to his rather unrealistic dreams, but his careful preparations and determined leadership ensured a Danish victory beyond all reasonable expectations, with Sweden capitulating to almost all of the Danish demands. Sweden gave up her claims on Finnmark and the fort of Sonnenburg on Øsel, and Älvsborg was ransomed at a price of one million *rigsdaler*, which Christian IV confidently hoped would prove impossible and would therefore default to Denmark. However, this was hardly adequate territorial compensation for Swedish advances in the east if Denmark was to preserve its balance of power in the Baltic. The free trade agreement was also reinforced and Sweden was granted permission to levy tolls on shipping at Riga.

The harsh terms of the treaty with respect to the Älvsborg ransom in fact proved much more to Sweden's benefit in the long run. Britain and the Netherlands feared for the consequences of Danish territorial expansion on their trade. The Sound tolls had been increased for the duration of the war and official Dutch protests were met with an arrogant dismissal by Christian IV. Alarmed at this disrespect and the prospect of a Danish monopoly in the Baltic the Dutch allied themselves with Sweden as a safeguard against any further machinations by Denmark. This fifteen year defensive alliance proved invaluable to Sweden, who had previously been without any western allies at all, and to a large extent made possible the payment of the Älvsborg ransom.<sup>11</sup> Ominously the Dutch also promised to respect Sweden's *dominium maris Baltici*.<sup>12</sup>

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<sup>10</sup> Stewart P. Oakley, *War and Peace in the Baltic 1560–1790*, (London, 1992), 48–9.

<sup>11</sup> Michael Roberts, *Gustavus Adolphus: A history of Sweden 1611–1632* (London, 1953), I, 71–2.

<sup>12</sup> Oakley, *War and Peace*, 53.

The Knærød treaty has been likened to the Versailles peace treaty and was regarded by all the players as unsatisfactory.<sup>13</sup> There is no doubt that Gustav Adolf concluded peace to play for time whilst he dealt with Sweden's conflicts in the east, and that he would later come back to the conflict with Denmark at a more advantageous time. The harsh terms also acted against Christian IV's standing in international diplomacy. Further conflict between the two nations would prove inevitable in their fight for Baltic supremacy. As Leo Tandrup put it: it was a bad war and it resulted in a bad peace.<sup>14</sup>

Peace with Denmark enabled Sweden to push her advantage in her fight with Muscovy and the territorial gains from the resultant Stolbova peace treaty of 1617 gave her an unbroken coastline from Kalmar through to Estonia. In its turn the Stolbova peace enabled the Swedish fight to be concentrated against Poland and after faltering gains in Livonia, Riga was captured in 1621, and Danzig subjected to an enforced neutrality in 1623.

Whilst these Swedish gains were being added to her growing empire the issue of free trade with Denmark was being stretched to breaking point. Sweden had imposed an indirect sales tax which was seen by Danish merchants as a toll in contravention of the Stettin agreement of 1570. In addition Sweden was now levying tolls on the southern Baltic and was attempting to gain exemption from the Sound tolls for trade with her newly gained territories. This was clearly a threat to Danish sovereignty in the Baltic and in 1622 Christian IV gained the *rigsråd*'s permission to resist this threat by banning the transport of Swedish war goods through Danish sovereign waters. The *rigsråd*, for the first time, acknowledged and defined the limits of Danish sovereignty in the southern Baltic at this time.<sup>15</sup> Christian IV also banned all warships and war materiel from passing the Sound and sanctioned high handed and malicious customs inspections on all Swedish shipping. Finally in 1623 tolls were imposed on Swedish shipping as a direct retaliation over the sales tax issue.<sup>16</sup>

Christian IV was keen to deliver a decisive show of force to preserve his supremacy against Sweden. However, in the meantime

<sup>13</sup> Kirby, *The Baltic World*, 143.

<sup>14</sup> Tandrup, *Mod triumf eller tragedie*, I, 219–223.

<sup>15</sup> Rådets betænkning, 6 July 1622, Kr. Erslev, *Aktstykker og oplysninger til rigsråad og stændermødernes historie i Kristian IV's tid*, (København, 1883–90), I, 336–7.

<sup>16</sup> Tandrup, *Mod triumf eller tragedie*, II, 539.

Gustav Adolf and the Swedish *riksråd* had concluded a truce with Poland and were well prepared to meet any Danish aggression. Only the Danish *rigsråd* sought to preserve the peace and forced a border meeting at Knærød in 1624. Despite blustering threats from Christian IV he knew that his army and navy had been starved of funds by the *rigsråd* and were in no fit state to engage a battle-ready Swedish force.<sup>17</sup> The Swedes knew they held the upper hand and with both the navy and army fully mobilised they posed a very real and immediate threat to Denmark. Christian IV was therefore forced to agree to a humiliating capitulation which re-imposed the former free trade agreement and ensured free passage of Swedish war materiel through the Sound.<sup>18</sup>

The 1624 Knærød incident marks the decisive moment when the *dominium maris Baltici* slipped permanently from Denmark's grasp. The relative power of the two Baltic nations was now finely balanced, but with the scale inexorably tipping in Sweden's favour.<sup>19</sup> Sweden had demonstrated that it was able to launch a successful amphibious attack in the heart of enemy territory when Gustav Adolf took Riga in 1621. With Denmark's maritime geography and small peace-time army, this new Swedish capability was a very serious threat that Christian IV could in no way counter in 1624.<sup>20</sup>

Before the Knærød treaty Denmark was recognised in Western Europe as a major Baltic power, but a humiliating climb down at once strengthened Sweden's and diminished Denmark's standing in international circles. Meanwhile Christian IV's expansionist policy in northern Germany had not been as successful as he had hoped. In an effort to retain his standing in international affairs he hastily concluded an agreement with England which allowed him to lead the fight in Germany as head of the Evangelical League. A quick success here he hoped would also strengthen his position in relation to Sweden.<sup>21</sup>

Denmark's involvement in the Thirty Years War (1625–29), known as the Lower Saxon War or the *Kejserkrig*, made few demands on

<sup>17</sup> Erslev, *rigsraad og stendermodernes historie*, I, 401–2.

<sup>18</sup> Tandrup, *Mod triumf eller tragedie*, II, 335–352.

<sup>19</sup> Roberts, *Gustavus Adolphus*, I, 234.

<sup>20</sup> Jan Glete, 'Amphibious Warfare in the Baltic, 1550–1700', in D. J. B. Trim and Mark Charles Fissel (eds), *Amphibious Warfare 1000–1700: Commerce, State Formation and European Expansion*, (Leiden, 2006), 141.

<sup>21</sup> Tandrup, *Mod triumf eller tragedie*, II, 542.

the navy in the Baltic, apart from coastal blockades, until the latter stages of the war. This dramatically changed in 1627 when Imperial troops overran Jutland, and threatened to push on to take the Danish islands. Superior Danish naval strength was instrumental in thwarting this threat, and the *rigsråd* noted that the navy was 'Denmark's greatest defence, next to God, in these troubled times'.<sup>22</sup> However, Denmark's disastrous land campaign had led the Habsburgs to contemplate the possibility of taking control of the Baltic for themselves and a grand plan was conceived which would unite the Spanish and Polish fleets in the Baltic. Preparations were also begun in Wismar for the building of an Imperial fleet and in 1628 Wallenstein assumed the grandiose title of General of the Baltic and Oceanic Seas.<sup>23</sup>

To combat this threat Sweden agreed to support Denmark in her fight and a three-year alliance was concluded in April 1628. This was no great pact of friendship but a tactical manoeuvre which both sides hoped would preserve their national security. After Jutland had been overrun Denmark was wary of a threatened seaborne invasion of her islands and was keen to sue for peace on favourable terms. An alliance with Sweden greatly strengthened her bargaining position. Sweden, on her part, knew that if Denmark capitulated there would be little to stop the Imperial forces from launching an attack against her. Gustav Adolf had also made the decision to involve himself in the German war but needed Denmark to maintain the fight until his war with Poland was ended and Sweden was in a more able position to launch an attack in Germany. By the terms of the treaty Sweden was to provide eight warships to strengthen the Danish navy and in return Denmark was to stop the passage of any ships sailing to Danzig. Although the treaty was limited it was significant in that the two Scandinavian powers suspended their contest for the *dominium maris Baltici* to see off the threat from a third party.<sup>24</sup> The test of the alliance was not long in coming. Wallenstein was interested in gaining control over all the German ports in the Baltic and in May 1628 laid siege to Stralsund. An Imperial victory here would give them control of virtually the whole north German coast, the consequences of which would have been grave for both Denmark

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<sup>22</sup> Erslev, *rigsraad og stendermødernes historie*, II, 50–1.

<sup>23</sup> Kirby, *The Baltic World*, 170–2.

<sup>24</sup> Roberts, *Gustavus Adolphus*, II, 351–6.

and Sweden. The relief of the siege by the combined Scandinavian forces gave each party what they wanted. Denmark had gained an important bargaining counter for her peace negotiations, and Sweden had gained a foothold in north Germany and a valid excuse for entry into the conflict.

In 1629 the Danish navy was able to further strengthen Denmark's hand in the peace negotiations. One squadron mounted a successful blockade of Wismar, whilst a force of 150 warships and transports enabled the landing of ten thousand troops in Schleswig to cut off the Imperial forces in northern Jutland.<sup>25</sup>

Despite these successes the terms demanded for peace were still unacceptable to Christian IV. In a last throw of the dice he invited Gustav Adolf to a border meeting at Ulvsbæk. Ostensibly this was to discuss how the two countries might defeat the Habsburgs maritime pretensions once and for all. However Christian refused to co-operate on any matter and the meeting ended in acrimony. The meeting had, however, served its true purpose for Christian IV in displaying a façade of Scandinavian unity. Wallenstein hurriedly settled the peace negotiations which proved more than generous to Denmark in the circumstances. The treaty of Lübeck has been described as 'the greatest diplomatic coup in Danish history' and although Christian IV was excluded from the Lower Saxon Circle, no Danish territory was lost, nor did Denmark have to pay any form of reparation.<sup>26</sup>

Christian IV may have succeeded in his short term aims with his pretence at Ulvsbæk but the long-term consequences were bleak. If Gustav Adolf were to fail to keep the Imperial forces at bay the Baltic would then be open to Habsburg domination. However, if he were to succeed then Sweden would be the undisputed master of the Baltic. Either way Denmark had irrevocably lost her control. Coupled with this Christian IV had also lost the respect of his western allies and Denmark could no longer to be regarded as a European state of the first rank. The original aims of the war had been reversed completely and Christian IV's personal humiliation was total.

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<sup>25</sup> R. C. Anderson, *Naval Wars in the Baltic 1522-1850*, (London, 1910), 43.

<sup>26</sup> Paul Douglas Lockhart, *Denmark in the Thirty Years' War, 1618-1648: King Christian IV and the Decline of the Oldenburg State*, (London, 1996), 205.

Sweden's truce of Altmark with Poland, and the subsequent successes of Gustav Adolf in Germany left no one in doubt as to who was the new master of the Baltic. Sweden controlled and levied tolls on virtually the entire southern Baltic coastline. Christian IV recognised the danger of Sweden enlarging its area of rightful Baltic dominion and warned the *rigsråd* in 1630 that a fleet still needed to be maintained to prevent any further encroachment on Denmark's sovereignty, but Danish policy in the Baltic remained somewhat hesitant in the years immediately after the peace of Lübeck.<sup>27</sup>

However, the death of Gustav Adolf in 1632 and the subsequent reverses experienced by the Swedes on the continent emboldened Christian IV to once again re-assert his claims on the Baltic.<sup>28</sup> He asked the *rigsråd* in December 1632 how 'the state's sovereignty over the Baltic could be reinforced and a navy kept mobilised', to which they responded with the granting of a corn tax.<sup>29</sup> This allowed, to some extent, for the navy to be maintained in what amounted to a state of armed neutrality.

By the mid-1630s Christian IV was in a position to resume his aggressive attitude to Baltic politics. Prompted by the impending end of the truce between Sweden and Poland, the fleet was ordered to be as strong as possible in 1635 and 1400 new seamen were to be recruited.<sup>30</sup> This mobilisation may simply have been a precautionary measure but the fact that excuses were ready prepared for the Emperor in case he questioned the 'strong mobilisation at sea' would suggest that Christian IV saw the impending outbreak of hostilities as an opportunity to regain power over the Southern Baltic.<sup>31</sup> The negotiations leading to the Peace of Prague in May 1635, which would have significantly strengthened the Imperial position in northern Germany, could also have also been a factor in Christian IV's thinking. In any case the Swedish-Polish truce was renewed and the peace of Prague proved to be elusive. The new recruits were stood down and the main Danish fleet went after pirates off Norway instead.<sup>32</sup>

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<sup>27</sup> Letter to *rigsråd*, 4 April 1630, C. F. Bricka & J. A. Fredericia (eds.), *Kong Christian den Fjerdes egenhændige Breve*, II, 258–9. Hereafter *egenhændige Breve*.

<sup>28</sup> Charles E. Hill, *The Danish Sound Dues and the Command of the Baltic*, (Durham, N.C., 1926, 102–8.

<sup>29</sup> Erslev, *rigsraad og stændermødernes historie*, II, 339.

<sup>30</sup> Letter to *rentemestrene*, 13 February 1635, *egenhændige Breve*, III, 333–4.

<sup>31</sup> Letter to Frederik Günther, 24 February 1635, *egenhændige Breve*, III, 340.

<sup>32</sup> Letter to *rentemestrene*, 1 August 1635, *egenhændige Breve*, III, 411.

Christian IV then turned his attention to Poland which was beginning to threaten Danish pretensions in the Baltic. A modest Polish navy was built up in the 1620s during the war with Sweden, but the main fleet was transferred to the Imperial Habsburg navy in Wismar in 1629. It did still have a small fleet in the 1630s, which it used to enforce the levy of tolls on shipping entering Danzig. This clearly violated Denmark's claims of sovereignty. Christian IV met this threat with force and two Polish warships were seized off Danzig in 1637.<sup>33</sup> He also had a pamphlet published in 1638 entitled *Mare Balticum* which laid out Denmark's claims to dominion, aimed at the Polish infringements, and wrote directly to the king of Poland threatening action unless the Danish *dominium* was recognised.<sup>34</sup>

The scale of Christian IV's actions against the very small Polish navy signalled a renewed aggressive stance in the Baltic. This soon made itself felt on his Sound toll politics and he began to regulate once more the passage of war goods through the Sound.<sup>35</sup> In 1639 the Sound tolls were raised by one percent while at the same time the units of measure were reduced, resulting in a virtual doubling of revenue.<sup>36</sup> This naturally infuriated the Dutch who sent a delegation to negotiate a reduction. This was met with belligerence by Christian IV and the Dutch attempted an unsuccessful boycott of the Sound. There then came rumours of a fleet of 300 Dutch sail which was to attempt to force the Sound without paying dues. This threat was met by an immediate mobilisation of the Danish navy and 35 warships assembled in readiness in the Sound.<sup>37</sup> Nothing actually came of the threat but Christian IV did relent to Dutch pressure and agreed to certain concessions, including the publication of the first table of tariffs.<sup>38</sup>

Dutch annoyance with Denmark was further compounded with the sending of a Danish ambassador to Spain and the apparent possibility of an alliance between the two countries. Sweden was also becoming incensed with Denmark's increasingly aggressive and

<sup>33</sup> Anderson, *Naval Wars in the Baltic*, 46.

<sup>34</sup> Hill, *Danish Sound Dues*, 108–9; Letter to Frederik Günther, January 1638, *egenhændige Breve*, IV, 172–4.

<sup>35</sup> Hill, *Danish Sound Dues*, 109–114; Albrechtsen *et al.*, *Konger og krige*, 442–8.

<sup>36</sup> Hill, *Danish Sound Dues*, 115.

<sup>37</sup> Navy list 7 May 1640, *egenhændige Breve*, IV, 333–6.

<sup>38</sup> Hill, *Danish Sound Dues*, 118–121.

insensitive attitude. This reached a climax when Danish ships were used in the escape of the Swedish queen mother and her subsequent residence in Denmark. The natural conclusion was a renewed defensive alliance between Sweden and the Netherlands against Danish aggression, signed in 1640.<sup>39</sup>

During the 1640s Denmark continued her aggressive stance in the Baltic and there were numerous petty disputes over salutes and the like. Despite the raising of tolls in 1639 revenues began to decline once more in 1642 and to compensate ever more vigorous and thorough visitations were made on shipping passing through the Sound. Then in 1643 Denmark blockaded Hamburg and started to levy tolls on shipping off Rügen, which directly affected Swedish war supplies.<sup>40</sup> At the same time Christian IV was presenting himself as a mediator in the Thirty Years War, and although he was claiming impartiality, the Swedes clearly could not trust a peace brokered by her avowed enemy.<sup>41</sup>

Sweden, under the regency of Chancellor Axel Oxenstierna, was meanwhile thinking of consolidating its position in the southern Baltic by a conquest of eastern Denmark, which would also give her control of the Sound. Oxenstierna was a bitter personal enemy of Christian IV and was keen to act before Queen Christina took over the throne in late 1644, and while the large Swedish army was able to be used before peace was concluded in Germany. Christian IV's provocations therefore provided Sweden with a welcome excuse and in the autumn of 1643 the *riksdag* resolved to proceed with a pre-emptive attack on Denmark. Christian IV completely failed to see the impending danger, and the Swedes, under the command of Lennart Torstensson, were able to capture Jutland almost unopposed. This was the start of the so-called *Torstenssonkrig* (Torstensson War) (1643–45).

The aim of the war for Sweden was to capture Danish territory, but while Jutland and Scania were quickly overrun, the decisive actions took place at sea.<sup>42</sup> As early as February Danish warships

<sup>39</sup> Hill, *Danish Sound Dues*, 122–3.

<sup>40</sup> Hill, *Danish Sound Dues*, 131–2.

<sup>41</sup> C. V. Wedgwood, *The Thirty Years War*, (Harmondsworth, 1957), 413.

<sup>42</sup> For naval operations during this war I rely on Niels M. Probst, 'Naval Operations during the Torstensson War, 1643–45', *Revue Internationale D'Histoire Militaire*, 84, (2004). I am indebted to the author for supplying a copy for this work.



were mobilised and sent out to attack enemy shipping and bombard the coasts of the newly occupied territories in order to prevent a Swedish invasion of the Danish islands. In April Christian IV set sail for Gothenburg with a fleet of ten ships with the aim of blockading the port and preparing for an invasion of Sweden. The blockade was effective but the Norwegian army had failed to appear by the time the king received news that a Dutch squadron was sailing to Sweden's aid. This was a fleet of 23 hired armed merchantmen assembled by the Dutch-Swedish industrialist Louis de Geer on behalf of the Swedish state. Christian IV immediately sailed south to prevent the Dutch fleet reaching the Baltic. In the meantime another Danish fleet had set sail for Gothenburg, but on hearing the news they too headed south. The two separate squadrons did not meet up but inflicted two successive defeats on the Dutch at Lister Dyb, off the south western coast of Jutland. The Dutch armed merchantmen were heavily battered by the larger Danish warships and only just managed to escape complete destruction. They sailed back to Holland where the crew mutinied.

Meanwhile the Swedish navy was preparing to launch an attack in the Baltic and the Danish squadrons hastily made their way back. They returned to find that the Swedes had already captured the island of Femern and were about to launch an attack on Copenhagen. The two fleets met off Kolberger Heide on 1 July and an all out battle between the two navies was fought. The numbers of ships were almost equal, the Danes had 40 and the Swedes had 43, but the Swedish ships were generally larger and had much greater firepower. The result, however, was far from decisive and both sides claimed victory, but in the aftermath the Danes were able to command what they thought was a position of strength by blockading the Swedes in Kiel fjord.

The Swedes on the other hand simply sat tight for four weeks while they repaired their ships and attempted to re-supply with provisions whilst waiting for a re-equipped auxiliary fleet to arrive from Holland. News of a second Dutch fleet convinced Christian IV of the need to attack, but despite continual manoeuvring the Danish fleet was unable to gain a suitable position to launch an offensive. Christian IV finally ordered the fleet to attack on 29 July, but unfavourable winds again prevented any action. The following day the Swedes went to sea to try and provoke a battle before sailing home. Despite Christian IV's earlier exertions the Danish navy now

simply retreated and the Swedish admiral expressed surprise that no attack came, even when the Danes at one stage gained the weather advantage. The day after the Swedes put back into Kiel Bay to take on additional provisions, which had now arrived, and later that night set sail for Stockholm unobserved by the Danes. When Christian IV realised what had happened the following morning he despatched a squadron in pursuit, but by then it was too late and the Swedish navy soon arrived safely back in Stockholm.

Despite his obvious anger at losing the Swedish fleet Christian IV could still feel satisfied. His navy had thoroughly beaten a Dutch squadron, performed well against a superior Swedish fleet, and most importantly it had prevented an invasion of the Danish islands. He judged that the Swedes would not sail again that season and that they would not be able to pay for the Dutch squadron through the winter. The Danish navy therefore returned to Copenhagen where the majority of ships were laid up. At the same time Torstensson, fearing being trapped in Jutland, moved south again, and the Danish army were forcing the Swedes on the defensive in Scania.

Things seemed to be going well and just to ensure that there were no surprises a small squadron of Danish ships was sent out in September to cruise among the islands. The Swedish navy in the meantime had been re-equipping in Stockholm and in early October it met up with the Dutch to create a combined force of 40 ships, which set off in search of the smaller Danish squadron. The two fleets met at the Battle of Femern Belt which proved to be a complete disaster for Denmark. Of the seventeen Danish ships ten were taken as prizes and only two made it back safely to Copenhagen. The balance of sea power had altered decisively in Sweden's favour who now had virtually complete control of the Baltic. The Danish army was forced to abandon its campaign in Scania and move instead to defend the Danish islands.

Over the winter the Danes re-equipped and in May sailed to impose a blockade of Gothenburg. This proved to be another failure, resulting in the loss of one small ship to the enemy and the flagship to the weather, and the remaining ships returned to Copenhagen. In the meantime an official Dutch navy of 49 warships under the command of de Witt had set sail with a convoy of 300 merchantmen. They passed through the Sound without paying any dues and the weakened Danish navy was unable to do anything but watch.

With both the Swedish and Dutch navies free to sail the Baltic

at will Denmark had little option but to capitulate at the peace negotiations. The Dutch, fearing Swedish domination of the Sound, were able to moderate some of the demands, but the result was still a complete humiliation for Denmark. Two separate treaties were signed with the Swedes and the Dutch reflecting their own interests. The treaty of Brömsebro gave Sweden and her newly conquered territories complete freedom from the Sound tolls; Swedish warships were allowed free passage through the Sound; the Elbe tolls were abolished; the islands of Gotland and Ösel and the Norwegian provinces of Herjedalen and Jämtland were ceded to Sweden; and Halland was given over as surety for thirty years. All claims regarding the *dominium maris Baltici* were also to be rescinded. The treaty of Christianopol signed with the Netherlands limited the Sound dues to one percent *ad valorem* and all other ancillary charges were abolished. France, Britain and the Hanse towns also obtained similar treaties.<sup>43</sup>

Christian IV began his reign as undisputed master of the Baltic, with great hopes of extending his power base into Sweden and the continent. He ended it in humiliation, having lost control of the Baltic, and forced to accept a diminution of his powers in the Sound. After the Peace of Westphalia ended the Thirty Years War in 1648 Denmark found herself virtually encircled by Sweden and with her strength and reputation in Europe in tatters, which were the very results that Christian IV had striven so hard to avoid.

### *Dominion of the Northern Seas*

Like the Baltic, the northern seas from Norway to Greenland were considered as sovereign possessions by the Danish-Norwegian monarchy. The basis for these claims were the two definitions recognised in international law for the right of sovereignty over open seas.<sup>44</sup> The first was that the seas in gulfs and bays of a country were held by that country. This justified earlier claims when it was believed that Norway was connected to Greenland and that the northern seas constituted one vast bay. Although this had long been disproved the

<sup>43</sup> Hill, *Danish Sound Dues*, 142–51; Albrechtsen *et al.*, *Konger og krige*, 461–2.

<sup>44</sup> Fulton, *Sovereignty of the Sea*, 3 & 35.

second definition, that if a country held the territory on both sides of a sea it could be considered sovereign, came into force. Norsemen had begun to settle Greenland in the tenth century and although no contact had been made since the fifteenth century Greenland was still considered to be a Norwegian possession. Possession of Iceland and the Faeroes, as well as the continued belief that Orkney and Shetland remained only in pawn to Scotland,<sup>45</sup> further strengthened the claims to the so-called *dominium maris septentrionalis*.<sup>46</sup> Despite the tenuous nature of Danish claims Christian IV strongly believed in them and they were driven by the same principles of *mare clausum* that governed his Baltic policies. If other nations were to use these seas then they must be prepared to pay for that privilege.

An administrative centre was established at Vardøhus on the northern tip of Finnmark in 1523, but it was not until 1586 that Frederik II formally claimed the whole of Finnmark and Samiland for Denmark-Norway. The value of these northern waters had been increased dramatically in 1553 when Richard Chancellor succeeded in rounding the North Cape and reached the Dvina.<sup>47</sup> The resultant exploitation of the Russian trade by the English Muscovy Company provided a welcome source of revenue. The English at first hotly disputed the Danish right to levy tolls but in 1583 an agreement was reached whereby England paid an annual fee of 100 Rose Nobles to Denmark for the right to sail these waters, thereby explicitly acknowledging Danish sovereignty. Similar agreements were also reached with France and Hamburg a few years later.

Much as this modest income was welcomed the potential of a North East Passage to the 'Indies' promised riches that would rival the Sound tolls and explains Denmark's determination to maintain control of these waters. Although the North East Passage proved impractical, unlicensed Russian trade did increase at a pace, which eventually forced Christian IV to establish a fort in 1642 to 'enforce all those seeking Archangel to pay a considerable toll there'.<sup>48</sup> However,

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<sup>45</sup> In the 1640s Christian IV sought to regain possession of the islands in return for Danish aid to Charles I. Steve Murdoch, Britain, *Denmark-Norway and the House of Stuart, 1603-1660*, (East Linton, 2000), 97.

<sup>46</sup> Sune Dalgård, 'Østersø, Vestersø, Nordsø, Dominium maris Baltici & maris Septentrionalis 1638', *Historisk Tidskrift*, 11 Rk. 5 Bd. (1956-59), 295-320.

<sup>47</sup> Sir William Foster, *England's Quest of Eastern Trade*, (London, 1966), 8-12.

<sup>48</sup> Letter to Corfitz Ulfeldt, 29 March 1642, *egenhandige Breve*, VIII, 165-6.

the collection of tolls remained difficult as there was no natural pinch-point and there was little piracy to subdue, which could induce merchants to willingly pay for protection. Inclement weather was the real danger here and there was little that even Christian IV could do about that.<sup>49</sup>

English attempts to find the North West Passage also excited the interests of the Danish monarchy. Danish claims over Greenland were at the moment undisputed, but if Denmark wanted to exploit this position and control all northern access to the Indies, and levy tolls accordingly, her sovereignty had to be reinforced. The tenuous geographical claim was strengthened by the equally tenuous belief that the Inuit were descendants of Norse settlers from the tenth century. If Denmark-Norway could re-establish contact with its old 'colony' then her position would, Christian IV believed, be unassailable.

Frederik II sent two unsuccessful expeditions to Greenland in 1579 and 1581 but Christian IV greatly increased these efforts. Expeditions were sent out in 1605, 1606 and 1607 with the purpose of exploring the Greenland coast and formally claiming the land as Danish sovereign territory. There were also strong hopes of finding great mineral wealth.<sup>50</sup> These early expeditions were not entirely successful but at least they did reach their destination and returned with some promise. The final arctic expedition of Christian IV's reign was little more than a complete disaster. Jens Munk's well-documented attempt to find the North West Passage in 1619 ended with the loss of all but two of the crew. A further expedition was planned in 1621 but the understandable lack of volunteers ended Danish hopes for Greenland for the time being.<sup>51</sup>

The promise of great riches from tolls on the North East and North West Passages was to remain nothing more than a dream, but there were very real riches to be had from the fishing and whaling industries. Both England and the Netherlands were very active in the northern waters and both contested Denmark's right to claim sovereignty and espoused the right of freedom to fish in open waters. The English case was weakened by intermittently agreeing to pay for fishing licences, but the Dutch steadfastly refused to acknowledge

<sup>49</sup> Glete, *Warfare at Sea*, 125.

<sup>50</sup> Finn Gad, *Grønlands Historie*, (København, 1967), I, 264–83.

<sup>51</sup> Letter to Christian Friis, 10 March 1621, *egenhændige Breve*, I, 199.

any claims to sovereignty of the seas and championed the concept of *Mare Liberum*. The discovery of Spitzbergen and its rich whaling grounds further complicated matters. Although the Dutch claimed discovery in 1596 the English were the first to exploit the whaling and claimed the islands as sovereign territory in 1613. The Dutch retaliated in force in following years and attempted to negotiate the division of sovereignty of the island with England. The result was that English, Dutch and French whaling stations were established, and English and Dutch warships sailed, in an area which Christian IV regarded as unquestionable Norwegian sovereign territory.<sup>52</sup>

This situation led to numerous violations of Denmark's supposed sovereignty, and the diplomatic correspondence with Denmark is littered with disputes over fishing and trading rights. The Hanse monopoly in the Icelandic trade with Denmark was rescinded in 1602 and transferred to Danish merchants.<sup>53</sup> Christian IV's instructions to a policing expedition in 1618 clearly outlines his policy on Norwegian waters:

on the way always ensure that no one, whatever their nationality, carries out any illegal fishing or trade on Norway's coast and rivers, in any way, without a pass.<sup>54</sup>

He also attempted to forbid all foreign whaling off the coasts of northern Norway, Iceland, the Faeroes and Greenland. Clearly he was determined that only Denmark would gain from exploiting these seas.

Several private merchant companies were encouraged to do just this, and Christian IV even involved himself with a whaling enterprise from 1619–22 when Danish naval ships were used, rather unsuccessfully, to catch whales.<sup>55</sup> The Greenland Company of 1635 was intended to exploit the Greenland whaling, but also raised hopes of re-colonisation of that country for a time. By far the most important of these companies though was the Icelandic Company. This received the grant of a monopoly in 1619 for trading and fishing in

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<sup>52</sup> Fulton, *Sovereignty of the Sea*, 181–4.

<sup>53</sup> Ole Feldbæk, 'The Danish Trading Companies of the Seventeenth and Eighteenth Centuries', *Scandinavian Economic History Review*, 34 (1986), 211.

<sup>54</sup> 22 April 1618, *egenhændige Breve*, I, 138–9

<sup>55</sup> Sune Dalgård, *Dansk-Norsk hvalfangst 1615–1660*, (København, 1962), 413–429. Two armed ships, *Røde Løve* and *Hvide Løve*, were purchased from the Netherlands for the purpose.

the area and became the principal importer of fish into Denmark. The company had bases in Copenhagen and Glückstadt and operated a considerable fleet of cargo ships and large armed merchantmen, which were occasionally requisitioned by the navy.

However, Danish hopes of monopolising the northern seas were clearly forlorn. Danish capital and expertise were far too limited, relying largely on imported Dutch and Biscayan technology and business methods, to fully establish any Danish supremacy. The area was also far too vast to police effectively and the riches too great a temptation to be overlooked by other nations. A change in whaling methods during the 1630s further reduced the Danish hold on the trade. Instead of requiring a coastal base to render the oil this was increasingly done aboard ship and despite Danish claims to sovereignty over all northern coastal areas there was little that could be done to prevent ships sailing freely in the open seas. This was recognised in 1641 when Denmark was forced to concede to Dutch pressure for rights to uncharted whaling at sea, ending all hopes of a Danish monopoly.<sup>56</sup>

The problems of effectively policing the northern seas are well illustrated by a voyage undertaken in 1616 by Jón Olafsson.<sup>57</sup> He sailed from Copenhagen with six ships up the Norwegian coast to Vardøhus and the Kola Peninsula, then on to Iceland, the Faeroes, and back to Norway before returning to Copenhagen. During the 22-week voyage they encountered only one small convoy of Hamburg merchants sailing to Archangel, whose papers were in order. On the way the ships nearly ran aground, two of them were separated in a storm, and the crew suffered from scurvy. Although this was probably a much more extensive tour than usual it clearly shows the impossibility of one squadron of just a few ships patrolling the entire northern seas, especially given the heavy weather frequently encountered and the shortness of the season. In fact these difficulties meant that for all practical purposes the strictly regulated sovereignty was limited only to around 20 miles off the coast Norway and around the Atlantic islands.<sup>58</sup>

<sup>56</sup> Dalgård, *Dansk-norsk hvalfangst*, 418.

<sup>57</sup> *Memorier og Breve, I, Islænderen Jón Olafssons oplevelser som bøssekytte under Christian IV*, (København, 1966), 132–150.

<sup>58</sup> Fulton, *Sovereignty of the Sea*, 527–8.

Fishing and the levying of tolls were not the only considerations to be taken account of in this area. The coast of Norway also had the added advantage to Denmark that it kept Sweden securely locked into the Baltic and therefore the politics of Baltic domination also encroach onto Norwegian waters. The only free access to the west that Sweden had outside the Baltic was the small strip of land between Danish Halland and Norway which was strongly defended by the fort of Älvsborg. This had long been a source of contention between the two powers and as soon as any hostilities broke out between them Älvsborg was immediately blockaded. Frederik II failed to gain control of the area during the Nordic Seven Years War and Christian IV clearly viewed its capture as a vital part of his Baltic strategies.

Although the Kalmar War was essentially a matter of Baltic domination its outbreak was precipitated by territorial questions in the north of Norway. Despite restating its territorial claims in 1595 the Danish-Norwegian presence was never very great and Sweden was able to steadily encroach on the right to levy taxes on the Sami. The treaty of Teusina of 1595 allowed Sweden to assume for herself the Russian rights to taxation in this area, as well as giving Sweden control of Narva, Russia's only major port in the Baltic. This enabled Sweden to crave a monopoly of trade with Russia, which would be gained if the passage to Archangel could be brought under Swedish control.

Christian IV could not tolerate this situation. By levying taxes on the Sami Sweden could conceivably take sovereignty of the area by default and so gain a valuable and legitimate route to the west, as well as deprive Christian IV of his revenue, both from the Sami and from the Archangel traders. In 1599 Christian IV sailed in person up to Vardøhus to re-assert Danish claims to sovereignty. The threat of Sweden gaining greater access to the west was also heightened when Karl IX established the trading town of Göteborg in 1607 next to Älvsborg, which Christian IV claimed infringed Danish trading and fishing rights.<sup>59</sup>

Despite these territorial problems being the pretext for the Kalmar war, Baltic domination was undoubtedly the motive, and it is significant that apart from the blockade and subsequent capture of Älvsborg, the fighting was confined very much to the Baltic arena. The successful outcome of the war for Denmark further reinforced Danish

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<sup>59</sup> Roberts, *Gustavus Adolphus*, I, 39–43.



sovereignty over all Norwegian waters up to Vardøhus, and to a lesser extent over the Kola Peninsula as well. Christian IV also confidently believed that the seemingly impossible Älvsborg ransom would mean that this strip of Swedish territory would also finally become Danish.

From the time of Christian IV's involvement in the Thirty Years War Danish interest in the northern seas waned significantly. The increasingly difficult political situation in the Baltic and northern Germany took first priority and the worsening financial situation made effective policing of the northern seas impossible. The area could not be completely neglected however, and the solution arrived at were the so-called *defensionskibe*. Complaints by the Norwegian estates over increasing piracy resulted in an ordinance of 1630 whereby each Norwegian *len* was to build a number of specially designed ships, providing a dedicated Norwegian fleet of ships. These ships, in contrast to the small galleys and skerry-boats formerly used for coastal defence, were designed as ocean-going armed merchantmen. They served two purposes. Firstly the merchants who operated them carried their own form of protection and therefore reduced the need for naval protection, and secondly they could be requisitioned into the main fleet in times of emergency. In theory the Norwegian coasts could be patrolled by locally maintained ships, leaving the main Danish fleet free for other purposes but in practice the number of *defensionskibe* built was fairly small and the Danish navy still had to patrol the northern seas.<sup>60</sup>

Periodic shows of strength were undertaken to maintain Danish claims of sovereignty, especially with respect to Spitzbergen. Warships were sent there in 1637 and 1638 to attack the French and Dutch whaling stations and it was finally established as Norwegian sovereign territory in 1643, although by this time its significance to the whaling industry was minimal.<sup>61</sup> Christian IV also continued to make a point of sailing the Norwegian waters himself right up to 1646 and Danish warships continued to be used to protect the Icelandic fishing grounds and trade routes.<sup>62</sup>

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<sup>60</sup> Yngvar Nielsen, *Jens Bielke til Østråt*, (København, 1872), 158–60; Ole Henrik Gjeruldsen, *Defensjonsskipsordningen i Norge 1630–1704*, (Oslo, 2002).

<sup>61</sup> Dalgård, 'Østersø, Vestersø, Nord sø', 311.

<sup>62</sup> H. D. Lind, *Kong Kristian den Fjerde og hans Mænd paa Bremerholm*, (København, 1889), 10.

*The Exploitation and Protection of Trade*

Another important role for the Danish navy was to support Christian IV's ambitious mercantilist politics. It did this in three different ways. The first was for warships to take part in trade themselves, the second was to protect merchant shipping by keeping the seas clear of pirates and convoying merchant fleets in times of danger, and thirdly, and by far the most important economically, to enforce the collection of tolls in Danish territorial waters.

The first trading company, and the most important as far as naval participation was concerned, was the Danish East India Company. This received its charter in 1616 and was originally a private venture based largely on the Dutch East India Company, with Christian IV as one of the principal shareholders. The vessels involved in the trade were a mixture of small naval warships and merchant ships, but the distinction was blurred greatly by the king's active involvement in the company. This involvement increased from 1630 when the company essentially became a royal concern, trading insolvently, but maintained simply to bolster the king's prestige at home and abroad. Vessels such as the *Christianshavn* were company owned ships, but were manned to a large extent by naval personnel and received spares and victuals from the naval dockyard.

The number of purely naval vessels involved was not great, around eight ships over a twenty-year period, but the method of Danish trade meant that they could be away from home for several years.<sup>63</sup> In contrast to the Dutch and English companies the Danes principally traded amongst merchants in the east, rather than sending regular cargoes back and forth to Europe. The dangers from the weather, and from Dutch and Portuguese competitors also took their toll on the ships with several being badly damaged and some lost altogether. Another short-lived trading company sought to exploit the supplies of ebony in Mauritius. The company had the backing of the king and the warship *Flensborg* was used on the one and only voyage between 1622–24.<sup>64</sup>

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<sup>63</sup> Sanjay Subrahmanyam, 'The Coromandel Trade of the Danish East India Company, 1618–1649', *Scandinavian Economic History Review*, 37 (1989), 41–56.

<sup>64</sup> Sune Dalgård, 'Danish Enterprise and Mauritius Ebony 1621–24', *Scandinavian Economic History Review*, 4 (1956), 3–16.

The trading companies in the northern seas did not use warships directly, although, as already mentioned, Christian IV was not above experimenting with warships in whaling expeditions. The navy's principal role in this area was to keep competitors at bay and to keep the seas clear of pirates. The Spanish Company was the only other trading company of any great significance to the navy. The involvement of naval vessels in this trade was minimal, involving only the occasional convoy duty when piracy was interfering with trade, but from time to time small warships were sent to trade Norwegian timber for Spanish salt.<sup>65</sup>

Piracy was evident on the Baltic to some extent, but the area known as the *Vestersø*, encompassing all waters from Spain to Norway, was particularly prone to hostile attacks on merchant shipping. This included some piracy, although action against pirates was sporadic and appears to have been driven to a large extent by public opinion. This was particularly the case with the hunt for the notorious Spanish pirate Juan Mendoza in 1615.<sup>66</sup> The major problem was the large-scale war on trade being carried out by Spain on the Netherlands. Spanish and Flemish privateers and royal warships primarily targeted Dutch merchantmen, but neutral ships, including those from Denmark and Norway were often attacked as well. Their attacks could occur in waters over which Denmark held dominion and a Danish naval presence was therefore required to protect its own shipping and to maintain sovereignty. The war on shipping was particularly fierce in the mid 1630s and in 1635 nine Danish warships were used to convoy vessels from Norway and a total of 13 ships were sent after pirates in the northern seas.<sup>67</sup> The civil war in England also provided an additional threat to Danish-Norwegian shipping and several vessels were harassed or seized by Parliamentary forces in the 1640s.<sup>68</sup> The fight was aided to some extent by the use of Danish and Norwegian privateers, but unfortunately very little research has been carried out on this subject and it is impossible at this stage to quantify the number of ships involved or their impact.<sup>69</sup>

<sup>65</sup> Letter to *rentemestrene*, 6 August 1640, *egenhændige Breve*, IV, 376–7.

<sup>66</sup> The hunt for Mendoza is related by Jón Olafsson. *Islænderen Jón Olafssons oplevelser*, 120–26.

<sup>67</sup> Letter to *rigsråd*, 1 December 1635, *egenhændige Breve*, III, 445–6.

<sup>68</sup> Murdoch, *Britain, Denmark-Norway*, 123, 136, 142 & 162.

<sup>69</sup> H. C. Berg, *Dansk Marinehistorisk Bibliografi 1500–1975*, (København, 1975), 73.

The issue also becomes confused with the Norwegian *defensionskibe*, which were also intended to meet the increasing threat in the 1630s.

A much more important role, both politically and economically, for the navy was to enforce the collection of tolls from foreign shipping using Danish sovereign waters. This was closely linked with claims to sovereignty over the Baltic and the northern seas and little more needs be said about the importance of the Sound dues or of Danish aspirations for the control of the North East and North West Passages. The other principal area where the question of sovereignty, or suzerainty, and tolls occurs is in northern Germany.

Christian IV's position as Duke of Holstein dominated the claim to suzerainty in northern Germany. The Danish monarchy had long envied the trading superiority of Hamburg and, although the town maintained a strongly guarded independence Christian IV felt that it should come under his jurisdiction as Duke of Holstein. In 1603 he essentially forced the town to pay tribute to him by threatening to suppress their trade with Iceland, but despite this the town remained independent.<sup>70</sup> Christian therefore resolved to divert trade away from Hamburg, and reinforce his ambition to command the estuaries of the Elbe and Weser, by establishing the fortified port town of Glückstadt on the Elbe in 1616.<sup>71</sup> He made his intentions perfectly clear when he stated that 'with God's help Glückstadt will become a city and Hamburg a village'.<sup>72</sup> It would also thwart any Dutch plans to evade the Sound dues by the construction of a canal to the Baltic.

Christian IV's interest in the area was also closely linked with the struggle for Baltic supremacy. While Sweden increased her possessions in the eastern Baltic Christian IV recognised the need to counter-balance this with increased Danish control over the north German states. His position in the area was greatly strengthened by the appointment of his family members in the bishoprics of Bremen, Verden, Schwerin and Halberstadt, and resulted in his own election

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<sup>70</sup> Johan Jørgensen, 'Denmark's Relations with Lübeck and Hamburg in the Seventeenth Century', *Scandinavian Economic History Review*, 11 (1963), 73–79; Albrechtsen, Frandsen & Lind, *Konger og krige*, 376–8.

<sup>71</sup> Although sovereignty was claimed on the Weser and all ships had to strike their colours in recognition of this, no attempt was made to levy tolls there (*Kancelliets Brevbøger*, 8 July 1625).

<sup>72</sup> Letter to Corfitz Ulfeldt, 17 June 1640, *egenhændige Breve*, IV, 356.

as Captain-General of the Lower Saxon Circle in 1625.<sup>73</sup> He used this power to reverse Hamburg's assertion of independence in 1618. Seamarks and warships were placed in the Elbe in 1620 and troops marched on the town the following year. Hamburg had little option but to agree to Christian IV's claims of suzerainty and presented him with a diamond ring and a large sum of money by way of conciliation.<sup>74</sup>

The humiliation suffered in the Thirty Years War stripped Christian IV of his authority in the Lower Saxon Circle but strengthened his resolve to increase his powers as Duke of Holstein. This is seen in his decision to impose tolls on the Elbe. He obtained a grant from the Emperor after signing the Peace of Lübeck in 1629 for the levying of tolls on the river. This incensed the town of Hamburg as, although it had actually acceded to Holstein's suzerainty in 1621, it still claimed 'antient priuelidges and the freedom of Commerce upon the River Elue for all people and all nations that use the same'.<sup>75</sup> To make matters worse they had been granted, just the previous year, a confirmation by the Emperor, of their exemption of all tolls on the river.<sup>76</sup>

When tolls were imposed in 1630 it immediately led to open hostilities. Hamburg succeeded in capturing a small Danish naval squadron at Glückstadt and blockaded the town. The entire Danish fleet was then sent round from Copenhagen and after a fight of several weeks the blockade was broken and the Hamburgers forced to accept defeat.<sup>77</sup> The Danish naval presence on the Elbe was thereafter greatly strengthened to avoid any repeat of Hamburg's resistance.

Although the right to levy tolls on the Elbe was rescinded by the Emperor in 1637 Christian IV still maintained his claims over the river and forbade all trade with Hamburg. The dispute dragged on, with Hamburg trying to extricate itself from Holstein's suzerainty,<sup>78</sup> but by 1643 Christian IV decided to blockade Hamburg,<sup>79</sup> and

<sup>73</sup> Roberts, *Gustavus Adolphus*, I, 197–99, & 242.

<sup>74</sup> Albrectsen, Frandsen & Lind, *Konger og krige*, 401.

<sup>75</sup> Outline of the History of Denmark, Bodleian Library, MS Rawl. C737, 3, f. 77–8.

<sup>76</sup> Outline of the History of Austria, Bodleian Library, MS Rawl. C737, 3, f.160.

<sup>77</sup> Battle instructions to Klavs Daa, 24 August–6 September 1630 *egenhændige Breve*, II, 280–291.

<sup>78</sup> Justification for attack against Hamburg, 22 February 1643, *egenhændige Breve*, V, 303–4.

<sup>79</sup> Letter to *nigsråd*, 22 February 1643, *egenhændige Breve*, V, 304–7.

succeeded in extracting a sizeable ransom and the recognition of his suzerainty not just of the town but also of the Elbe. This situation did not last long, however, as after the Torstensson War in 1645 Sweden gained control of the Bremen side of the Elbe and all Danish claims to sovereignty had to be abandoned.

The tolls collected on the river went some way to alleviate Christian IV's penury after the Thirty Years War but his dream of Glückstadt eclipsing Hamburg proved unrealistic, with even Danish merchants still preferring to use the well established facilities and trading links of Hamburg.<sup>80</sup>

### *Royal Prestige*

The question of royal prestige played a great part in the development of Christian IV's navy. He was a highly ambitious monarch with great pretensions of taking a leading role in European politics and the concept of 'royal reputation' in the formation of the king's diplomatic philosophy has been strongly stressed.<sup>81</sup> The navy, as the most visible instrument of foreign policy, was therefore greatly influenced by these considerations, especially in the early years of his reign. Ken Booth, writing on twentieth century naval policy, gives an interesting analysis of the question of prestige that could easily be applied to the time of Christian IV:

prestige is sought not merely or mainly to serve the national interest (although actions are justified in these terms), but as a political end in itself. Prestige is sought not so much to promote other ends, but for the glory and satisfaction which come from having a recognised reputation.<sup>82</sup>

The ships built directly after Christian IV's accession demonstrate his attitude towards his own status and how this was reflected in his navy. Great ships, such *Tre kroner*, were far larger and much more extravagantly decorated than was practicable for real warships. They were designed not so much for operational duties but to impress

<sup>80</sup> Jørgensen, 'Denmark's Relations with Lübeck and Hamburg', 73–79.

<sup>81</sup> Paul Douglas Lockhart, 'Denmark and the Empire, A Reassessment of Danish Foreign Policy under King Christian IV', *Scandinavian Studies*, 64 (1992), 390–416.

<sup>82</sup> Ken Booth, *Navies and Foreign Policy*, (New York, 1979), 52.

foreign powers and to signal to the rest of Europe that Denmark was a maritime power to be reckoned with. The great importance attached to his status as a maritime monarch is further emphasised by the fact that Christian IV was regularly portrayed in pageants and allegories as Neptune, the divine ruler of the seas.<sup>83</sup>

The first exposure of the new Danish fleet to the western world occurred in 1606 when Christian IV took a squadron of eight ships on a state visit to his brother-in-law James VI and I in London. The impact was immediate. Pamphleteers and commentators all praised the ships, their ordnance and men, and news of the visit spread rapidly across Europe. The visit had no overt diplomatic purpose and it seems that the visit, apart from the obvious family reasons, was arranged purely as a show of naval strength.

The Kalmar War gave the navy its first chance to impress the world with its fighting abilities. Although no great naval battle was fought the navy did impress foreign observers by its size and for its part in taking the forts of Kalmar and Älvsborg. The Frenchman Julien Peleus was particularly effusive in his praise, although his description must be tempered by the fact that he also compared Christian IV and his generals to Alexander, Caesar and Hannibal.<sup>84</sup>

... a fleet of large and beautiful ships which might be called marvels of the ocean as they were not just ships but castles and powerful fortresses floating on the sea, in any of which there were eighty first-rate bronze cannon. Their fittings were sumptuous and magnificent and if the ocean had had eyes it would have admired it with astonishment, as it was worthy of such a prince.

Impressive squadrons were sent abroad in succeeding years on diplomatic missions, and a very favourable impression of Christian IV and his navy persisted among foreign powers until his setbacks in the Thirty Years War. A typical view is reflected by Robert Munro:<sup>85</sup>

The King is powerfull by Sea, and is mightily well furnished of all things necessary for warres, of Armes, Artillery, Ammunition, victualls,

<sup>83</sup> Mara R. Wade, 'Festival Books as Historical Literature: the Reign of Christian IV of Denmark (1596–1648)', *The Seventeenth Century*, VII (1992), 1–14.

<sup>84</sup> Julien Peleus, *L'Histoire de la dernière guerre de Suède... contre les Danois*, (Paris, 1622), 274–5.

<sup>85</sup> Robert Munro, *Monro His Expedition with the worthy Scots Regiment (called Mac-Keyes Regiment) levied in August 1626*, (London, 1637), I, 20.

money, and what else is requisite to set forwards a warre; and, which is more, a noble, and a liberall Master, as ever I did serve.

Paradoxically the event that brought Christian IV really onto the European stage, his entry into the Thirty Years War, had little to do with the navy. His subsequent humiliation removed any chances of recovering his previous promise as a European leader but his defeat on land strengthened his resolve to remain powerful at sea. The greatest show of royal prestige of his reign was the wedding of his son Prince Christian (V) in 1634. Among the many delights arranged for the assembled foreign dignitaries was a parade of the fleet and a mock naval battle, as well as allegories in which Christian IV featured as Neptune.<sup>86</sup> To some extent he did regain the respect of the maritime powers during the 1630s, but despite his posturing the memory of military humiliation still hampered his standing in Europe. This standing was completely destroyed after the naval defeat of 1644.

The king's mercantile projects were also based to a large extent on royal prestige. The East India Company was established largely as a result of envy and jealousy of the English and Dutch companies. Even when the company proved unprofitable he refused to let it be liquidated fearing that this would reflect badly on his own prestige at home and abroad. He also planned a West Indian Company for similar reasons, although this plan came to nothing. The imposition of tolls on the Elbe can also be regarded in the light of royal or ducal prestige. Christian IV wanted to eclipse the republican city with his own town of Glückstadt, and to enforce his suzerainty over Hamburg. Similarly prestige played an important part in Christian IV's use of the navy in domestic politics, as we shall see in Chapter Two, as he sought to enhance his own powers at the expense of his Council's through political control of the navy.

The numerous roles that Christian IV's navy was expected to take on clearly involved a number of commitments which were far larger than any one navy could hope to meet adequately. This compelled the navy to be used largely as a defensive force, with the size and number of ships being designed very much as a deterrent. Several minor acts of aggression were witnessed by small squadrons of the

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<sup>86</sup> Charles Ogier, *Ephemerides, Sive Iter Danicum*, . . . , (Paris, 1656), 59–61.



navy during the reign but only during the Kalmar War was the navy as a whole used aggressively. The importance of the navy in national defence was clearly demonstrated at the end of the *Kejserkrig* and during the Torstensson War.

The geography of the kingdom drove the requirements for the navy. It was necessary to maintain a number of different types of vessel and to operate a number of separate fleets at the same time to patrol the vast area of claimed sovereign seas. Effectively three navies were needed to cover all the areas involved, reflecting Christian IV's triple embodiment as King of Denmark, King of Norway, and Duke of Holstein. Geography provided Denmark-Norway with a great many advantages, such as being able to control the Sound, but it also proved one of the kingdoms' major disadvantages. If the entire fleet ever needed to be mobilised in any one area it left the other areas vulnerable to attack or unlicensed commercial exploitation.

Connections to Sweden and the continent made Denmark vulnerable to attack by land, demonstrated so ruthlessly in the case of Jutland in 1627 and 1643. Although border defences were greatly strengthened under Christian IV, the army remained under strength, poorly trained and inefficient. The navy could only be one part of the country's defence but personal ambition and difficult political circumstances meant that Christian IV paid far more attention to it than perhaps he ought to have done. In comparison to the army, Christian IV enjoyed relative autonomy in the development and deployment of the navy and this helps to explain why so much of his resources went into building up such a large navy while the army remained relatively small. The result of this strategy was that during the Thirty Years War the failure of the army twice resulted in the imposing navy being used only to provide the last line of defence in defeat. Petersen comes to the conclusion that Denmark was not in fact a true maritime power, but was torn between wanting to be both a great maritime power and a great continental power, and succeeded ultimately in being neither.<sup>87</sup>

Having said that it must be admitted that, given the limitations, the navy was relatively successful in its endeavours. Its role as a deterrent at sea was unquestioned, and when called upon to fight it

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<sup>87</sup> Charles William Petersen, *England and Danish Naval Strategy in the Seventeenth Century*, (unpublished PhD thesis, University of Maine at Orno, 1975), 308–16.

was on the whole competent, although by no means spectacular. Where setbacks were encountered they were largely as a result of diplomatic or tactical incompetence on the part of the king himself. Christian IV failed to appreciate that impressive military hardware was no substitute for guile and tact in international negotiations or astute military tactics. His clumsy attempts at diplomacy outdid any advantage he hoped to gain by the admiration of his powerful navy, and more or less negated its role in international power politics. Royal prestige depended first and foremost on the monarch, if he himself was perceived as conceited and inept then no amount of military hardware could alter that impression.

He also overlooked the fact that a large powerful navy was useless unless it was effectively commanded by a tactician and strategist of some skill. The philosophy of royal prestige built up the navy to what it was in 1644, but the same philosophy also caused its defeat. Christian IV's belligerent attitude precipitated the Swedish attack in the first place and his insistence on dictating naval strategy at the expense of a better-qualified or skilled commander resulted in the strategic error that ended with the navy being all but annihilated. As Booth stated, in words which could easily have been written to describe Christian IV's policy, 'used without care, a policy of prestige can contribute to overcommitment, exposure, lack of vigilance, arrogance and ultimately failure'.<sup>88</sup>

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<sup>88</sup> Booth, *Navies and Foreign Policy*, 55.

## CHAPTER TWO

### THE NAVY IN DOMESTIC POLITICS

The navy was the key institution of government over which Christian IV sought to maintain personal control. This was not just because of its vital role in enforcing foreign policy, but also because the internal running of the state relied on maintaining effective maritime communications between all its disparate elements. The mobilisation of the state's military resources and their deployment to any part of the state could only be achieved through control of the sea, so whoever controlled the sea not only had the ability to protect the state from external threats but also to quell any internal threats to national security. The importance of the sea in this respect is underlined by the fact that the civil wars in 1523 and 1534–36 were both decided by control of the sea.

Control of the sea was also important to the development of the domestic economy by protecting the flow of goods. Taxes and other state revenues also flowed to Copenhagen by sea so whoever controlled the lines of maritime communications quite literally controlled the state's finances. Christian IV's control of the navy therefore gave him a very effective tool with which to impose his authority in domestic politics, particularly in his power struggle with the council.

Before we can begin to understand this struggle we must first look at what constituted the 'Danish state' and how it was governed. When the Kalmar union of the three Scandinavian kingdoms of Denmark, Norway and Sweden was established under Queen Margrethe the constitutions of the separate member states were maintained. It was a union of crowns rather than a union of governments. When the union finally disintegrated in the early sixteenth century Denmark and Norway retained their union of crowns. Norway was formally subordinated to Denmark in 1536 when the Norwegian council was abolished for making moves towards independence. By the seventeenth century Norway was administered in much the same way as a Danish province. It no longer had its own government or administration and was governed directly from Copenhagen. The term Denmark-Norway is therefore often used to describe this joint kingdom.

Denmark itself consisted of a number of different provinces. The island of Sjælland, which included Copenhagen and Kronborg Castle, was the most important politically. Jutland, Funen, and the Scanian provinces of Skåne, Halland and Blekinge provided the best agricultural land. The smaller islands were of lesser importance and were administratively grouped under the title of Småland. In addition Iceland, the Faeroes and, at various times, the Baltic islands of Bornholm, Gotland and Øsel also came under Danish jurisdiction. Of all these areas the Danish-Norwegian monarchy owned nearly half of the land.<sup>1</sup> These crown lands were divided into administrative units, or fiefs, called *len*, which were administered by noble governors called *lensmænd*. The distribution of *len* was at the discretion of the king and as noblemen progressed in their careers they were steadily awarded larger and more important *len*. This created the paradox that as officials were promoted to greater responsibility within the central government they also took on greater local administrative responsibilities.

In addition to being king of Denmark and Norway the Danish monarch also held the title of Duke of Schleswig and Holstein. Schleswig was a Danish duchy while Holstein was an independent German duchy and a part of the Holy Roman Empire. However, the two duchies had long been bound together and in 1460 this bond was strengthened when both elected Christian I as their duke. To further complicate matters the lands of Holstein were divided in 1544 between the senior Oldenburg line and the junior line known as Holstein-Gottorp and the two lines held joint suzerainty. Power in the duchies was shared by the two hereditary dukes and the Holstein council known as the *landdag*. From 1533 Denmark and the duchies were bound together in a formal defensive union of mutual trust and friendship. As a result of first the threat and then the reality of being caught up in the war in Europe Christian IV renewed and strengthened this union in 1623 and again in 1637. However, during the Torstensson War the formalities of the union were abandoned by Christian IV who commandeered all ducal forces without regard to the *landdag* or Holstein-Gottorp and by 1658 Holstein-Gottorp had become an open enemy of Denmark.<sup>2</sup>

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<sup>1</sup> E. Ladewig Petersen, 'From Domain State to Tax State', *Scandinavian Economic History Review*, 23 (1975), 126.

<sup>2</sup> Gunner Lind, 'Krig, udenrigspolitik og statsdannelse i Oldenborgmonarkiet,

Various other ancient peoples and lands were traditionally claimed by the king. This is reflected in the formal diplomatic title accorded to Christian IV, which stated that he was 'King of Denmark and Norway and of the Goths and Vandals, Duke of Schleswig-Holstein, Stormarn and Dithmarschen, Count of Oldenburg and Delmenhorst'.<sup>3</sup> Although the lesser titles had by now no real political weight they were a significant factor behind Christian IV's expansionist policy in northern Germany. He did not therefore reign over a Danish state, nor even a Danish-Norwegian state, but rather a 'conglomerate state' of lands over which he held sovereignty or suzerainty.<sup>4</sup>

### *The System of Government*

Since the Middle Ages Denmark had been an elective kingdom whereby the king was elected by the *rigsråd* (Council of the Realm) and representatives of the three higher estates of the realm. Before taking up his position as elected head of state the king was obliged to sign an accession charter which outlined his powers and privileges and bound him to abide by the decisions of the *rigsråd*. The charter also obliged the king to ensure that the number of members within it was maintained at a required level, and that certain positions in the central administration were filled. The concept of 'The Crown of Denmark' was clearly defined as meaning a joint sovereignty held by both the king and the council. Policy-making was therefore a dual responsibility with the king and the *rigsråd* linked in a dyarchic administrative system.<sup>5</sup> This practice was explained by Arild Huitfeldt in his history of Denmark written for the instruction of the young Christian where he detailed his views on the constitution with a suitable nautical analogy:<sup>6</sup>

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1533–1658: En analyse af unionen mellem Danmark, Norge og Slesvig-Holsten', unpublished article available online at [www.staff.hum.ku.dk/lind/etc/unionen.pdf](http://www.staff.hum.ku.dk/lind/etc/unionen.pdf).

<sup>3</sup> Ronald L. Meldrum, *The Letters of King James I to King Christian IV 1603–1625*, (Surrey, 1976), letter dated 30 September 1615.

<sup>4</sup> Harald Gustafsson 'The Conglomerate State: A Perspective on State Formation in Early Modern Europe', *Scandinavian Journal of History*, 23 (1998), 189–213.

<sup>5</sup> An important analysis of the Danish system of government can be found in: Leon Jespersen (ed.), *A Revolution From Above?: The power state of 16th and 17th century Scandinavia*, (Odense, 2000).

<sup>6</sup> Arild Huitfeldt, *En kaart Historiske Beskriffuelse . . . Christian den Tredie*, (*Danske Krønike* 9 Bd.) (København, 1595), f. :iij.

a prince and master shall gather unto him intelligent, wise and distinguished people, whose counsel he shall use, so that what he lacks in himself can be remedied with their good advice, and establish a form of rule with others. As on a ship, in addition to a steersman who, after all is the top ranking, has others there who help the ship, its crew and it's sailing, and determine the right course to steer. One sits by the rudder, others draw up the anchor and others slacken and haul the sheets: So shall an intelligent master do. He should use the help and advice of others, preferably the most knowledgeable,<sup>7</sup> since many eyes see better than one, and many a man relying on his own intelligence deceives himself, and puts both himself and others in danger.

Although the decision making process was therefore complex, a powerful *rigsråd* could provide a safety net, looking after the interests of the realm, in the teeth of an over-ambitious or aggressive king. This system broke down though, as Christian IV was able to dictate foreign policy from his independent and unchallengeable position as Duke of Holstein, and the *rigsråd* also tended to look after the personal interests of its own members rather more than those of the state as a whole.

In theory the *rigsråd* was to represent the views of the three higher estates of the realm, the nobility, the clergy and the burghers. However, in practice it represented only the interests of the ruling clique of higher nobility who maintained a self-perpetuating hold on the *rigsråd*. The accession charter, which was drawn up by the *rigsråd*, was in many respects a guarantee for the ruling nobility that their status and privileges would be safeguarded. Certain names crop up time and again, such as Ulfeldt, Sehested, Rantzau and Urne, and it was not unusual for both father and son, brothers or cousins to serve at the same time. Indeed, of the 48 members elected during Christian IV's reign only two had no family connection with other *rigsråd* members.<sup>8</sup>

The *rigsråd* was not simply a compliant body that rubber stamped the king's policies but was an institution with real political power that was able to force the king to alter policy with which it disagreed. Their approval was needed for the raising of any extraordinary taxes and they had an absolute veto on the declaration of war. The

<sup>7</sup> By which Huitfeldt meant the high nobility.

<sup>8</sup> Leon Jespersen, 'Rekrutteringen til rigsrådet i Christian IV's tid', in K. J. V. Jespersen, (ed.), *Rigsråd, adel og opposition 1570-1648*, (Odense, 1980), 108-9.

choice of members was therefore of vital importance if Christian IV was to succeed in carrying out his own political agenda. He had a relatively free rein in choosing its members, but he did tend to abide by the recommendations of the sitting members, presumably so as not to unduly antagonise those whose approval he needed. The number of members within the *rigsråd* varied widely but averaged around fifteen. Christian IV's accession charter required him to maintain a suitable, though unspecified, number of members, but his appointment of new members was highly erratic. They were elected for life, but instead of electing new members as old ones died Christian IV tended to wait until it was absolutely necessary to replace members and then appoint a number of them at the same time. In 1596, after the long minority had taken its toll, it was necessary to appoint nine new members, in 1616 he appointed six, in 1627 another four, and in 1640 six again. He did appoint some individually but only when he was forced to, or when he felt it was convenient or expedient to do so.

New *rigsråd* members had to swear an oath that outlined their formal obligations.<sup>9</sup> This essentially committed them to swear allegiance to, and uphold the reputation of, the king and the realm, to uphold the protestant faith, to be impartial in their judgements and to treat the rich and poor as equals. Christian IV drew up a revised oath in 1644 which further bound the *rigsråd* members to abide by all mandates and orders issued by the king.<sup>10</sup>

Within the *rigsråd* there were a number of officials of the realm who were responsible for various aspects of the running of the country. They were formally heads of their own branches of administration but they did not necessarily have a tangible administrative apparatus.<sup>11</sup> Under Christian IV's accession charter he was obliged to have these posts filled at all times but, as in all aspects of Christian IV's government, the practice did not quite match the theory and many of the posts remained vacant for long periods.<sup>12</sup> This practice meant that Christian IV was both the servant of the *rigsråd*, having

<sup>9</sup> Kr. Erslev, *Aktstykker og oplysninger til rigsråd og stændermodernes historie i Kristian IV's tid*, (København, 1883–90), III, 576.

<sup>10</sup> 8 Dec 1644, C. F. Bricka & J. A. Fredericia (eds), *Kong Christian den Fjerdes egenhændige Breve*, V, 541.

<sup>11</sup> Jespersen, *A Revolution from Above?*, 67.

<sup>12</sup> Jespersen, 'Rekruttering til rigsrådet', 39.

to accept its rulings, but also its master in that he was able to choose its members, or not, as the case may be. This situation lies at the heart of the problem in analysing the precise boundaries of control within the Danish central administration

The duties assumed by the different officials and the political power they wielded was very much dependent on the individuals who held office. Occasionally Christian IV would formulate a written 'contract' outlining their terms of reference but these were ambiguously worded and referred only to the duties of a particular individual who was taking up office, and did not constitute a formal outline of the responsibilities of the office itself. In order to try and determine the roles of these officials it has been necessary to glean information from a variety of sources and to analyse the instructions given in the king's letters.<sup>13</sup> By these means it has been possible to more accurately define their duties in practical terms.

The *rigshofmester* (Steward of the Realm) was the highest office of state and was in essence a viceroy. He appeared to hold complete authority over the government, was accountable only to the king, and acted as deputy in his absence. When Baron Cormenin visited Copenhagen in 1629 he noted that the '*grand Maistre*' was 'the sovereign power after the king, in affairs concerning the state and the monarchy, that is like the Lieutenant of government'.<sup>14</sup> This was essentially true, although a little simplified. The role was primarily a financial one, being directly responsible for the running of the treasury, but this role also meant that the operation of the navy, the army, fortifications and crown building works also came under his jurisdiction.

Despite its seeming importance this was the least likely of the state offices to be filled. The reason for this was undoubtedly Christian IV's unwillingness to have such a powerful member in his *rigsråd*. He did not want another individual in government to rival his own position of power. The appointment of Christoffer Valkendorf to the post in 1596 can be regarded largely as a rebuff to the minority government, when Christian IV was trying to establish his own

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<sup>13</sup> The full analysis of letters can be found in Martin Bellamy, *Danish Naval Administration and Shipbuilding in the Reign of Christian IV (1596-1648)*, (unpublished PhD, University of Glasgow, 1997).

<sup>14</sup> Des Hayes, *Les voyages de Monsieur Des Hayes, Baron de Covmesvin, en Dannemarc*, (Paris, 1664), 245.



authority. The ageing Valkendorf had little political power and remained under Christian IV's shadow.<sup>15</sup> More than thirty years then elapsed after his death in 1601 before Christian IV felt able to appoint someone else to the post. The choice fell on Frans Rantzau, the king's son-in-law and a close drinking companion, whom Christian IV obviously believed he could trust. Rantzau did not have long to prove his abilities, however, as within a few months of his appointment he drowned in the castle moat after a particularly heavy drinking session with the king. A further decade then elapsed before Corfitz Ulfeldt, another son-in-law, was chosen to take the office in 1643. Christian IV came to severely regret this decision after Ulfeldt turned against him and used his position and influence to indulge in large-scale embezzlement and pompous delusions of grandeur.

In direct contrast to the position of *rigshofmester*, that of *kongens kansler* (King's Chancellor) was always filled. The choice of *kansler* was the sole prerogative of the king and was particularly important, as he tended to operate as the king's right hand man and confidante in the absence of a *rigshofmester*. No formal description of the duties of the *kansler* exists but it is clear that his two main administrative functions within the state were as leader of both the *rigsråd* and of the Danish Chancellery. Quite how much political leadership in the *rigsråd* he was expected to have is hard to judge, but it appears that he may have been more of a spokesman than a real 'leader'. He was also responsible for overseeing the establishment of all new laws and statutes approved by the *rigsråd*.<sup>16</sup>

The position of *statholder i København* (Statholder in Copenhagen) was an anomaly. Technically it was not one of the high state offices, but because the position of *rigshofmester* was so seldom filled it assumed a much greater importance than it ought to have warranted. In many ways being *statholder* was a form of apprenticeship to becoming *rigshofmester*. All three of the men appointed to this post in Christian IV's reign had previously held the position of *statholder*, although Breide Rantzau did hold the post of *statholder* for 18 years without being promoted. The formal responsibilities of the office were only

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<sup>15</sup> Arthur G. Hassø, *Rigshofmester Kristoffer Valkendorf til Glorup (1525–1601)*, (København, 1933), 174–88.

<sup>16</sup> Ole Degn, *Christian 4.s kansler*, (Viborg, 1987), 47–8.

laid down in 1637 when Corfitz Ulfeldt took office.<sup>17</sup> These outlined various fiscal and judicial duties relating to the city and harbour of Copenhagen but also stated that he was to represent the king and deal with foreign ambassadors. This only partially explains the importance of the post. The description provided by Baron Cormenin is much more instructive:<sup>18</sup>

It is the greatest office of the realm today, it is like the *Surintendant de Finances* and much more besides, . . . he has the status of *Stadtholder* of the Realm, although he could be reduced to *Stadtholder* of Copenhagen alone, but that he is supported by the favour and authority of his master. One does not know well the old function of this office, especially since it has been established only after that of grand master (*rigshofmester*) has been left unfilled, which if it were, the *stadtholder* would have nothing to do; as far as I can judge, I believe it is an office like the other with a change of title, to diminish the authority of the first, and revived as this second, with less credit and authority.

This confirms the assumption that that the post of *statholder* was used as a substitute for *rigshofmester*, but with limited authority. It also makes it clear that the *statholder* was in charge of the treasury.<sup>19</sup> Although not expressly mentioned in the terms of office, the navy, the victualling store and the arsenal also came under his jurisdiction, all being based in Copenhagen. In addition he was responsible for supervising all building works in Copenhagen, which meant that most of Christian IV's building projects were carried out under his immediate superintendence.

The *rigsmarsk* (Marshal of the Realm) was the official nominally in charge of the Danish military. The main duties were the recruitment and command of the *rostjeneste* (noble cavalymen) in wartime. He had virtually no role to play in the army's peacetime administration. Within the *rigsråd* the *rigsmarsk* also played an influential part

<sup>17</sup> 24 April 1637, *egenhændige Breve*, IV, 130–32.

<sup>18</sup> Des Hayes, *Les voyages de Monsieur Des Hayes*, 245–253.

<sup>19</sup> This supposition is further strengthened by evidence from Christian IV's letters. When Rantzau died in 1632 the number of letters to the treasury soared. As soon as Ulfeldt was installed in 1637 the number immediately drops again, although Engberg suggests that Ulfeldt may not have officially taken over the supervision of the treasury until after the death of the *kongens kansler* in 1639. (Jens Engberg, *Danske finanshistorie i 1640'erne*, (Aarhus 1972), 44 & 131). Further evidence is provided by a letter which the king addressed to 'Statholder Corfitz Ulfeldt by hand, and in his absence the *rentemestre* to set in motion'. (8 May 1641, *egenhændige Breve*, V, 86).

in the granting of finances to the army. Unlike the previous positions the selection of a *rigsmarsk* had to be approved by the *rigsråd*. This authority was enforced in 1627 when Christian IV was forced to accept the appointment of Jørgen Skeel to the post after his own leadership of the army had proved so disastrous. The appointment thereby ensured that the military and financial command of the army was brought back within the control of the *rigsråd*.<sup>20</sup>

Like the *rigsmarsk*, the main responsibilities of the *rigsadmiral* (Admiral of the Realm) were much more operational than administrative. He was expected to command the fleet at sea, both in times of peace and war, and the position would therefore seem to have required an established naval officer with extensive seagoing experience, although this was not always the case. The office itself was only stabilised when Peder Munk assumed control during the Nordic Seven Years War (1563–1570). The earlier commanders of the navy held varying titles including *Kongens Admiral* (the king's admiral) and *Øverste Admiral* (highest admiral) and held office for only one or two years.<sup>21</sup> Peder Munk was promoted to *Øverste Admiral* in 1567 and by 1575 he became known as *Rigens Admiral*, a title he held until his promotion to *rigsmarsk* in 1596. The first official terms of office date from 1616 when Albert Skeel was appointed.<sup>22</sup> In summary these stated that he was to command the navy in peace and war, maintain good order and discipline within the fleet, and maintain a register of the navy's ships and seamen.

The *rigskansler* (Chancellor of the Realm) was, as his Latin title of *Justitiarius* suggests, the equivalent of the English Lord Chancellor. He was the chancellor of the *Kongens Retterting* (high court), acting as the king's deputy at times when he was unable to preside in court himself. He was responsible for drawing up all new statutes of judicial law and for the administration of justice throughout the realm. In addition he was the secretary of the *Herredag*, the assembly of the nobility and high clergy.

The position of *statholder i Norge* (Statholder in Norway) was created in 1572, after the Nordic Seven Years War, and supplanted the

<sup>20</sup> E. Ladewig Petersen, 'Defence War and Finance: Christian IV and the Council of the Realm 1596–1629', *Scandinavian Journal of History*, 7 (1982), 309; Gunner Lind, *Hæren og magten i Danmark 1614–1662*, (Odense, 1994), 284.

<sup>21</sup> H. D. Lind, *Fra kong Frederik den andens tid*, (København, 1902).

<sup>22</sup> December 1616, *egenhændige Breve*, I, 108–110.

earlier position of *Norge riges kansler* (Norway's state chancellor).<sup>23</sup> For most of the time it was merely an additional title for the holder of the largest Norwegian *len* of Akershus, and their responsibilities tended to be restricted simply to their own *len*. Their main duties were the collection of taxes and tolls, the maintenance of an army, and the administration of justice. However, when another of the king's sons-in-law, Hannibal Sehested, took over the post in 1642 he extended his powers to cover the whole of Norway and acted very much as a viceroy in that kingdom. Under his leadership a separate Norwegian administration with its own treasury was developed. He also established a strong independent Norwegian army, and administered the operation of the *defensionskibe* fleet.<sup>24</sup>

In addition to the *rigsråd* there were three principal institutions of government that dealt with the administration of the state. These were the *Danske kancelli* (Danish chancellery), the *Tyske kancelli* (German chancellery), and the *rentekammer* (Treasury), which relate in very simplistic terms to the 'home office', the 'foreign office' and the 'treasury'. The *Tyske kancelli* and the *rentekammer* both had their origins as sub-departments within the *Danske kancelli* but by the seventeenth century they had become distinct bodies in their own right, although nominally still remaining under its supervision. Both the *Danske kancelli* and the *rentekammer* were controlled by members within the *rigsråd*. In contrast the *Tyske kancelli* had no noble supervision and was very different in the way in which it was run.

The distinction between what should be dealt with by the *Danske kancelli* and the *Tyske kancelli* was dictated not by subject matter but by the language in which it was to be written. As many of the functionaries and servants of the state were of German origin, or understood German better than Danish, there was a great deal of overlap between the boundaries of the two chancelleries with regard to matters within the kingdom of Denmark-Norway.

The *Danske kancelli* dealt with all state correspondence that was written in Danish. This meant that its areas of responsibility encompassed the internal functioning of the Danish and Norwegian kingdoms as well as foreign relations with Sweden and occasionally Russia.

<sup>23</sup> Rolf Fladeby, *Norges historie*, 6, (Oslo, 1977), 87–91.

<sup>24</sup> Sverre Steen, *Det norske folks liv og historie*, 6, (Oslo 1930), 79–93.

Its business was organised by geographical region rather than by subject matter and separate copybooks were kept for each province. This may have been suitable from the point of view of *len* administration but was clearly inefficient as a means of central government. It was supervised by the *kongens kansler*, but governed on a day-to-day basis by a chief secretary. Beneath him were a number of under-secretaries and clerks. These positions were manned largely by young noblemen who were working their way up the career ladder to eventually become *lensmænd* or *rigsråd* members.<sup>25</sup> These secretaries also formed part of the royal court and as the king regarded them as 'his' personal assistants this had a major influence over its administration.<sup>26</sup>

The *Tyske kancelli* dealt with all correspondence written in German and Latin. Its principle concern was with the German duchies and foreign relations with the German states, the Netherlands, France, Britain and Spain. However this did not exclude it from also dealing with domestic or with Swedish or Russian matters. Unlike the *Danske kancelli* it was run almost entirely by commoners of the burgher class, many of them from the German duchies and states. Theoretically it should have come under the supervision of the *kongens kansler* but in practice Christian IV took a very active personal control of it. This brought him into conflict with the *rigsråd* who, justifiably, were concerned about the accountability of such an important section of the Danish administration, and tried to enforce the right of the *kongens kansler* to oversee its running. The *Tyske kancelli*, like the *Danske kancelli*, was led by a chief secretary but in this case their political power was very much greater. For most of Christian IV's reign the position was held by Frederik Günther, who was his chief adviser on non-Swedish foreign affairs.

The Danish involvement in the Thirty Years War brought with it a greater need for German diplomacy. In 1628 a new post of *Tyske kansler* (German chancellor) was created to head the chancellery. The first incumbent was based principally in Glückstadt and appears initially to have operated more as a royal ambassador in the German

<sup>25</sup> Daniel O. Fisher, 'Kongens unge mænd: Christian 4.s kancellisekretærer', in K. J. V. Jespersen (ed.), *Rigsråd, adel og opposition 1570–1648*, (Odense, 1980), 169–94.

<sup>26</sup> Leon Jespersen 'Court and Nobility in Early Modern Denmark', *Scandinavian Journal of History*, 27 (2002), 140.

duchies and states rather than as an administrative official. However, the appointment of Ditlev Reventlow as *Tyske kansler* in 1632 effectively resulted in the *rigsråd* losing all control of this chancellery. To compound their annoyance the Holstein *statholder*, Christian Pentz, also became increasingly involved in Danish foreign policy after marrying one of the king's daughters.<sup>27</sup> However, despite all these changes, the chief secretary back in Copenhagen still retained much of his power and Günther remained the chief official with whom the king corresponded on matters concerning the *Tyske kancelli*.

The *rentekammer* was the department through which most, though by no means all, state revenue and expenditure was administered. It was originally a subsidiary of the *Danske kancelli* but by the early seventeenth century it had become a virtually independent institution in its own right, although much of its correspondence was still directed through the chancellery. At its head were a senior *rentemester* (treasurer) and a junior *rentemester*, both were noblemen and appointed personally by the king. From 1625 it was decreed that one should undertake the principal accounts of the *rentekammer* itself, while the other audited the accounts of all other state offices. Beneath the two *rentemestre* were two senior treasury clerks and a staff of around 25 junior clerks. In contrast to the *Danske kancelli*, these junior positions were manned by commoners, albeit from an elite class of wealthy burghers.<sup>28</sup> The *rentekammer* was overseen from the *rigsråd* by the *rigshofmester* or *statholder*, and to a lesser extent by the *kongens kansler*, when neither of these positions was filled. Judging by the number of his petty requests for payment the king also kept a very close eye on its day-to-day running. The *rentekammer* also became very much involved in the procurement of materials and the supervision of state suppliers, the reasoning presumably being that if it managed these contracts effectively it could make considerable savings for the state. This was particularly true with respect to the dockyard, arsenal, and victualling store where its duties extended far beyond simple accounting.

In addition to these permanent institutions of government the opinions of the estates were sought at *stændermøder* (meetings of the estates general), which were held infrequently in different parts of the king-

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<sup>27</sup> Svend Ellehøj, *Christian IV.s tidsalder* (Danmarks Historie, 7), (København, 1964), 296–7.

<sup>28</sup> Engberg, *Danske finanshistorie*, 29–43.

dom. Theoretically members of all four estates were to attend, but in practice the burghers and peasantry were only occasionally invited, and from 1631 the peasantry were excluded altogether.<sup>29</sup> These *stændermøder* were initially only a formal protocol with little real influence, but they began to take on increasing importance. At the meeting in Odense in 1638 the estates forced the *rigsråd* to recognise their right to better representation and forced the more regular calling of *stændermøder*. The estates' interest and influence was largely restricted to taxation and their own privileges rather more than to wider political issues, but their opposition to increased taxation to pay for the army did have an impact on Christian IV's foreign policy. At the meeting in Copenhagen after the Swedish war in 1645 the estates strengthened their political position when it was agreed that a noble *landkommissær* (land commissioner) was to be appointed in every province who was to consult members of the other estates and then present their combined grievances to the *rigsråd*. The burghers also established their own yearly meeting to which a royal representative was expected to attend.

From the above analysis it can be seen that the central administration was very disjointed and inefficient. So much depended on personality and context, and on personal relationships with the king that any formal definition of roles becomes virtually meaningless, which explains the very fluid boundaries between the state officials and even the central institutions of government. Another important factor was that many of the *rigsråd* members were frequently away dealing with their own *len* business. The issuing of orders was therefore greatly influenced by who happened to be in Copenhagen at any particular time and therefore able to carry out the instructions. This partly explains why the *rentemestre* occasionally received large numbers of instructions relating to the navy, as they were more likely to remain in Copenhagen than any of the high state officials.<sup>30</sup> This lack of formal boundaries is demonstrated by the number of letters Christian IV addressed to more than one official, or those rather enigmatically addressed, such as one sent to the '*rigsadmiral* or whoever

<sup>29</sup> Erslev, *Aktstykker*, III, 595.

<sup>30</sup> The chief secretary of the *Danske kancelli* also received detailed instructions concerning the repair of ships at one stage. (Letter to Iver Vind, 14 January 1639, *egenhændige Breve*, VIII, 136–7).

is in command at Bremerholm'.<sup>31</sup> As we have seen with the *Danske kancelli* there is also a lack of clarity in the delineation between state officials and servants of the royal court. The account books also show that some officials appeared indiscriminately as court servants or state officials in different years. This is partly a reflection of the confused nature of state finance but it also highlights the lack of any clear boundaries within the government at this time.

Many of the practices within the government were outmoded and much too rudimentary for the growing responsibilities and workload that the central administration was having to undertake. In fact the size of government was actually very small, amounting to not much more than around 60 or 70 permanent members of staff in the *rigsråd* and the three government institutions.<sup>32</sup> Given the geographical size of Denmark-Norway, and the ambitions that Christian IV had for its expansion, the central government would appear far too small to govern effectively, certainly when compared to the size of the administrations in England, France and, above all, Spain.<sup>33</sup>

Despite these inadequacies no attempt was made by the king to reform the system, and much of its functioning continued to depend on his direct supervision. This was in part a deliberate ploy to maintain as much political control as possible. The background behind this reasoning, and the profound impact that it had on the control of the navy, ought now to be addressed.

### *The Struggle for Control of the Navy*

The issues raised in Chapter One gave some indication of the character and personality of Christian IV, but it is worth investigating this more closely to see how it affected his relations with the *rigsråd*. This is a subject which has aroused great passions with historians

<sup>31</sup> 13 June 1637, *egenhændige Breve*, IV, 143.

<sup>32</sup> Approximately 30 staff in the *rentekammer*, 20 in the *Danske kancelli*, 12 in the *Tyske Kancelli* and the six high state officials in the *rigsråd*. This, of course, excludes servants in the royal court.

<sup>33</sup> Among the most informative studies on the central administrations of these countries at this time are: G. E. Aylmer, *The King's Servants: The Civil Service of Charles I 1625–1642*, (London & Boston, 1974), 7–68; J. H. Shennan, *Government and Society in France 1461–1661*, (London, 1969); I. A. A. Thompson, *War and Government in Habsburg Spain 1560–1620*, (London, 1976).



for centuries and each generation has moulded his character to suit their own political ideologies.<sup>34</sup> The first historians, such as Ludvig Holberg and Niels Slange writing in the early part of the eighteenth century, were patriotically minded and portrayed him as a righteous and noble king who stood up to the 'bad neighbour' and his meddling *rigsråd*, and who was simply unlucky when things went wrong. This idealised and romantic view held sway until the late nineteenth century when there began a critical backlash from liberal historians like J. A. Fredericia, and especially the Marxist, Erik Arup, who painted him as an arrogant, incompetent, and brutal tyrant who subjected his people to unnecessary war and hardship. Thankfully the debate has moved on significantly in recent years and it is now possible to attempt a more reasonable and objective assessment of the king and his political talents and shortcomings.<sup>35</sup>

There can be no doubt that Christian IV was an arrogant and self-centred monarch whose belief in his own destiny was overpowering. He was a king who believed that if his own and his realm's power remained static then it was a sign of weakness and decline, and he was therefore constantly striving for greater prestige and recognition, both at home and abroad.<sup>36</sup> This in part explains his innate distrust of subordinate officials and his inability to delegate effectively. He seems to have felt that by delegating duties to anyone else he was in some way diminishing his own powers. A common fault attributed to him is that his inability to delegate meant that he was so caught up in the minutiae of everyday activities that he often failed to see the bigger picture. Long term planning was a definite problem for him. It was his nature to go all out on whatever project had taken his fancy at the time. Once he was bitten by a certain scheme his enthusiasm was often overwhelming and any opposition he encountered was frequently quelled by bullying his

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<sup>34</sup> Leo Tandrup, 'En brav, blakket eller brutal konge: Christian IV i den møsterdannende danske historieskrivning og litteratur fra Holberg til vor tid', in Ellehøj (ed.), *Christian IVs verden*, (København, 1988), 378–411.

<sup>35</sup> The works of Svend Ellehøj, Leo Tandrup, Steffen Heiberg and E. Ladewig Petersen stand out above all others. Lockhart assesses Christian IV's character but he displays an obvious affection for his subject and perhaps overstates the king's ingenuity in foreign affairs. Paul Douglas Lockhart, *Denmark in the Thirty Years' War, 1618–1648: King Christian IV and the Decline of the Oldenburg State*, (London, 1996), 55–80.

<sup>36</sup> Tandrup, *Mod triumf eller tragedie*, I, 88–90.

opponents into submission. If things did not initially go as well as he had hoped he easily lost interest and tried to achieve his aims by an easier route, or else was diverted altogether by some other project. This character trait was as true in foreign policy as in his various building projects, and was a serious obstacle to his greater acceptance in diplomatic circles.

Christian IV was seriously affected by his defeat in the Thirty Years War. Everything he had done previously was aimed at increasing his power base. In his mind, defeat was simply not a possibility, which made the humiliation even harder to bear. To make things even worse, in the same year as this defeat, his morganatic wife Kirsten Munk left him for another man, and Kronborg Castle, the great symbol of Danish supremacy on the Baltic, was burnt down. Thus in the space of a few short years his position as a monarch, as a warrior, and even simply as a man, had suffered irreparable damage. After 1629 Christian IV's feeling of confidence was replaced by bitterness. Whereas before his policies were based on an assumption of divine right and royal prerogative, afterwards his main motives seem to have been based more on vengeance and jealousy, and a vain attempt to restore his previous position of supremacy.

His relationship with the *rigsråd* was fundamental to the effective governing of the state, but from the very beginning it was highly strained. It has been suggested that this was due to his long minority, during which time the *rigsråd* delayed his coronation until his nineteenth year, despite his assumption of suzerainty of the German duchies at sixteen.<sup>37</sup> The fact that the *rigsråd* also won a bitter struggle with his mother to supervise his education also played a strong part. The *rigsråd* was much more conservative than the king. Its members were first and foremost landowners and this mentality can be seen to influence virtually all their decisions. The high nobility owned their estates and administered the most important *len* in the rich farming areas of Jutland and Scania. Their livelihoods were therefore threatened by any actions which would lead to fighting in these border areas and their initial reaction was always to safeguard peace at all costs.

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<sup>37</sup> Knud J. V. Jespersen, 'Herremænd i kongeklæder', in Ellehøj (ed.), *Christian IV's Verden*, (København, 1988), 126–30.

Christian IV's policy of expansion in Sweden and northern Germany was consequently in direct opposition to their own wishes. Quite apart from the loss of revenue caused by warfare they stood to lose a great deal of their power and privilege if Christian IV gained any more territory outside of Denmark. Their fear of an ever increasing German administration has already been mentioned, but if he were also to succeed in gaining Sweden then the Danish *rigsråd* would become the ruling council of only one part of a joint state in which Christian IV regarded himself as hereditary and absolute monarch of Norway and Sweden.<sup>38</sup> In matters of foreign policy they therefore always sought the easiest route to the preservation of peace, which frequently meant a policy of appeasement. They were so concerned with preserving the status quo that they failed to recognise that at times the best means of defence was attack. Only reluctantly did they eventually agree to the Kalmar War after Swedish manoeuvring had gone too far, and, more significantly, after Christian IV had threatened to declare war independently as Duke of Holstein. Thereafter they steadfastly refused to sanction any aggression against their neighbour. Their stubborn attitude is demonstrated by their response to the crisis in 1624. By refusing to back up the king by granting taxes to enable a naval mobilisation they managed to avoid a conflict with Sweden. However, they failed to appreciate the impact this humiliation would have on Christian IV who immediately sought to save face by defying his council and hastily entering the Thirty Years War as Duke of Holstein.

As this campaign turned to disaster the *rigsråd* managed to gain significant financial and political concessions from the king in return for their help in extricating him from the mess, including gaining control of all war finances. However Christian IV in turn also managed to extort funds from the *rigsråd* by threatening not to sign the Treaty of Lübeck. The relations between king and *rigsråd* became increasingly more strained. The king had lost his financial independence and was now forced to consult the *rigsråd* more regularly and was unable to keep the high offices of state unfilled for any significant length of time.<sup>39</sup> Christian IV sought to compensate for this loss of

<sup>38</sup> If Sweden were taken then it would also negate the Stettin Treaty, which guaranteed many of the *rigsråd*'s privileges. (Tandrup, *Mod triumf eller tragedie*, 106).

<sup>39</sup> The average number of *rigsråd* and *Herredag* meetings before 1627 was 1.6 per year. After 1627 this figure rises to 3.1. (Erslev, *Aktstykker*, I, 500–5; II, 644–50; III, 454–5.)

power by promoting his sons-in-law to the high state posts. However, this *svigersønpolitik* (son-in-law politics) eventually backfired when Corfitz Ulfeldt and Hannibal Sehested manipulated their positions within the *rigsråd* to increase their own power at the expense of the king's. The policy also served to antagonise the other council members and the *rigsråd* gradually split into two factions. With this background of distrust and tension between the king and *rigsråd*, especially in the field of foreign policy, it comes as no surprise that Christian IV was determined to maintain as free a hand as possible in the development and deployment of his armed forces.

The navy provided far greater scope for control than the army.<sup>40</sup> The navy was very capital intensive and Christian IV's personal fortune allowed him to build up the naval hardware needed for his own ambitions in the early years of his reign independently from any government control. He was also able to use his strong financial position to improve land defences through an extensive programme of improving existing fortifications and building new fortified towns such as Christianopel and Glückstadt, but the maintenance of an army was much more problematic. At the start of his reign land forces were still based on the outmoded principles of knights' service and peasant militias, both of which were organised on a provincial basis and required little in the way of central finance or control. Although the Danish monarch was seen as the army's commander in chief their political power over it was actually severely restricted. The king had virtually no control over the noble cavalry, which was financed by the nobility themselves and commanded, at least in theory, by the *rigsmarsk*. The *rigsmarsk* was also traditionally selected by members of the nobility so the king did not even have much control over their appointment.

Where Christian IV did have control was in the hiring of mercenary armies from military entrepreneurs who had a responsibility only to him, not to the state of Denmark, but even then his powers were limited. In Holstein he was able to keep a mercenary army on an almost permanent basis in the late 1610s and early 1620s that he used very effectively in his drive to enhance his power base in northern Germany. As Duke of Holstein he was able to recruit and

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<sup>40</sup> For a detailed discussion of Christian IV's army see: Gunner Lind, *Hæren og magten i Danmark 1614–1662* (Odense, 1994).

deploy these troops without any regard to the *rigsråd*, but in Denmark its co-operation was essential and a large permanent force of mercenary troops was simply not a possibility. They were happy to sanction their short-term use, such as during the Kalmar War, but a mercenary force implied an aggressive rather than a defensive role, which went against its most fundamental principles. A hired army also represented a threat to the nobility's political powers as the command structure of mercenary troops gave them no say in their actual use.

If Christian IV wished to have a permanent military force an army based on native recruits seemed to be the only solution. This, however, could only be achieved by conceding considerable political control to the *rigsråd*. The *rigsråd* was traditionally resistant to any kind of reform, but was willing to consider the creation of a national army for a number of reasons. It would be cheaper than hiring troops, it was based on national defence and, crucially, the nature of its administration would always mean that they would retain some political control over it.

The move to establish a permanent force came after the Kalmar War, when Christian IV famously dismissed elements of the peasant militia as 'worse than beasts'. In 1614 the first permanent army was created by raising provincial regiments based on a quota of men to be supplied from farmsteads. Soldiers were not at first permanently employed, but a regime of training was implemented and officers were engaged to improve the professionalism of the army. A number of additional reforms subsequently took place in order to create a more efficient administration, all of which gradually increased the power of the nobility. Christian IV still remained technically in charge of the army until the reforms of 1624 when control of the army's administration was shared between the king and members of *rigsråd*. The raising of provincial regiments formally saw responsibility for the administration of the army placed in the hands of the *lensmænd*. The new army was financed by the raising of money from the estates in negotiation with *rigsråd*. The permanently employed officers in the provincial regiments were also paid directly by the *len*, so the funding for the army was almost entirely controlled by the nobility. Reforms to the cavalry also strengthened their powers, making it impossible for Christian IV to use the army without the nobility's consent.

In order to fight the *Kejserkrig* Christian IV again hired troops from military entrepreneurs over which the *rigsråd* had no control. However,

when the war changed from an offensive to a defensive campaign the nobility took the opportunity to increase their position of power. In order to secure the defence of the realm they gave their support to raise more regiments from Danish lands, significantly altering the balance between national and hired troops. They were then able to strengthen their control by appointing a number of noble *krigskommissærer* (war commissioners) to command the various provincial elements of the army. The *rigsmarsk* also for the first time assumed a role as leader of the army as a whole. The appointment of a *generalkrigszahlkomissær* to take overall control of the administration of army finances further increased their position, even if the post was at first only temporary. Christian IV may still have been commander in chief, but he was certainly no longer in overall control of the army.

The army continued to expand in the 1630s while Denmark remained in a state of armed neutrality. Christian IV could only achieve further reforms of the army in 1637 by granting even more political concessions to the *rigsråd*. The army was thereafter controlled by a permanent noble administration.<sup>41</sup> With the nobility so intimately involved at all levels of the army's administration it was never possible for Christian IV to use it to his own ends. The navy therefore provided a much easier tool to manipulate in his struggle with the *rigsråd*.

This manipulation can be seen in his appointment, or otherwise, of officials to the post of *rigsadmiral*. Right from the very beginning of his reign Christian IV began manipulating the role of this office. Peder Munk, who had been the leading admiral since the 1560s, could have presented a threat to Christian IV's personal control if he remained in office as *rigsadmiral*. He was also no doubt regarded as too old and set in his ways to be of any use to Christian IV in the more dynamic role he saw for the navy. Despite being old and feeble and unable to follow the Court,<sup>42</sup> he obviously still presented a potential threat and rather than being injudiciously removed from

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<sup>41</sup> All the estates were involved in approving the reform of the army but it was the nobility who took on the administrative responsibilities. Esben Albrechtsen, Karl-Erik Frandsen & Gunner Lind, *Danmarks Udenrigspolitik Historie I: Konger og krige 700–1648*, (Copenhagen, 2001), 389–401.

<sup>42</sup> Fynes Moryson, *The fourth Part of an Itinerary*, Library of Corpus Christi College, Oxford, MS. C.C.C.94, f.235.

power altogether Munk was promoted to the office of *rigsmarsk*.<sup>43</sup> This move would have tempered any allegations that such an influential naval leader was being removed from his post for political reasons, since he still remained in the *rigsråd*, although it certainly looks as though Munk was promoted out of harms way. Thus Christian IV took away any political control that the *rigsråd* had with regard to the navy and now held that control himself. When *rigshofmester* Christoffer Valkendorf died in 1601 he also assumed complete financial control over it as well.

This control was immediately exerted and the navy began to be used less as a defensive force and much more as an instrument of foreign policy, as witnessed by the Arctic expeditions and the voyage to England in 1606. The naval build-up Christian IV presided over also enabled him to begin to seriously threaten Sweden and helped to force the *rigsråd* into granting permission for the Kalmar war. The appointment of Mogens Ulfeldt, who was considered 'the king's man',<sup>44</sup> as *rigsadmiral* in 1610 can be seen as a convenient ruse to gain support for the Swedish war. Ulfeldt was a born warrior who had impressed the king as vice-captain during his 1599 trip to the North Cape, and as *underadmiral* on the English trip in 1606. Just prior to his appointment as *rigsadmiral* he had also been in charge of the naval manoeuvres in the Baltic designed to reinforce Denmark's *dominium maris Baltici*.<sup>45</sup> By appointing Ulfeldt Christian IV gained in two ways. Firstly Ulfeldt's views on the Swedish war were similar to his own and so he gained a valuable political lever within the *rigsråd*. This is demonstrated by the fact that Ulfeldt was one of the few *rigsråd* members not to vote against the war moves. In addition Christian IV could also claim that the *rigsråd* was regaining some control over the navy since a new *rigsadmiral* had been appointed for the first time during his reign.

While Ulfeldt's appointment can be seen as an astute move by the king, the appointment of his successor Albert Skeel, after Ulfeldt's

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<sup>43</sup> Heiberg maintains that Munk retained his position as *rigsadmiral* but all records after 1596 refer to him simply as *rigsmarsk*, even when he commanded the naval squadron to England in 1606. (Steffen Heiberg, 'Peder Munk', *Dansk Biografisk Lexikon*, 10, 126–7; and *Christian 4: monarken, mennesket og myten*, (København, 1988), 49)

<sup>44</sup> Heiberg, *Christian 4*, 165.

<sup>45</sup> Leo Tandrup, 'Mogens Ulfeldt', *Dansk biografisk leksikon*, 15, 151–2; H. D. Lind, *Kong Kristian den Fjerde og hans Mænd paa Bremerholm*, (København, 1889), 39–43.

death in 1616, must be viewed as decidedly odd. Skeel was not at all like Ulfeldt. He was primarily a professional politician, with only limited experience at sea. He was certainly not as well disposed to the king's foreign policy objectives or to the use of the navy as an extension of royal power.<sup>46</sup> It is perhaps significant that when he took up office as *rigsadmiral* in 1616 he had to sign Christian IV's terms of office that strictly limited his areas of responsibility to operational matters. It is tempting to think that while Christian IV was becoming more preoccupied with his machinations in northern Germany he needed someone in Copenhagen to supervise the running of the navy. However, if this were the case then why not choose someone more attuned to the task? It also seems very strange that Skeel was also used extensively in negotiations in Bremen and Verden. It may be that Christian IV felt he could not risk the possibility of a more professional seaman wresting control from him in his absence. By involving Skeel in Germany so much he could also keep a close eye on him and prevent him assuming too much control over the navy, although this would seem to defeat the object of appointing him in the first place. Skeel's appointment appears even more peculiar in the light of his subsequent violent disagreements over the Swedish situation. If the navy was designed to maintain the Danish *dominium* and prevent any Swedish encroachment, why then appoint someone as *rigsadmiral* who belonged to the camp of *rigsråd* members who believed in peace at any price? In the end Skeel became so outraged at Christian IV's political manoeuvring that he had to resign his post in 1622 after a particularly heated argument.<sup>47</sup> But perhaps this situation was astutely engineered by Christian IV in order to once again take over complete control of the navy at a time when his attentions were becoming once more focused on Sweden. In any event the post of *rigsadmiral* now became vacant, and with the post of *rigsmarsk* also vacant, Christian IV assumed complete political control over all the country's armed forces. This undoubtedly played its part in the precipitation of the Swedish crisis in 1624 and the subsequent entry into the Thirty Years War.

After things had gone badly and Jutland had been overrun in

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<sup>46</sup> Leo Tandrup, 'Albert Skeel', *Dansk biografisk leksikon*, 13, 418–21; Lind, *Kong Kristian og hans Mænd*, 43–5.

<sup>47</sup> Tandrup, *Mod triumf eller tragedie*, I, 95–6.



1627 it seems as though Christian IV initially panicked over the lack of a *rigsadmiral*. He wrote to the *rigsråd* in November asking for their suggestions,<sup>48</sup> although they were not at all clear whether it was a ‘*rigsadmiral* which there previously has been’, or a ‘sea admiral who should temporarily command a particular fleet’.<sup>49</sup> For the former post they suggested Jens Sparre, a nobleman who was not a member of the *rigsråd*, though whom they obviously wished to be. Christian IV was not convinced though. The fact that he had already appointed four new *rigsråd* members that year as well as a *rigsmarsk* seems to have influenced his decision, and he opted instead to go for an existing *rigsråd* member in Klaus Daa.<sup>50</sup> Again this was a rather curious choice. Daa had no experience of the navy or seafaring. He was much more experienced with army affairs, having served in the Kalmar War as a cavalryman, and was *krigskommisær* (war commissioner) to the army in 1626. In fact Daa was not actually appointed to the post of *rigsadmiral* until 1630, and by then he had taken an active role in forcing the review of war finance which brought it under the control of the *rigsråd*.<sup>51</sup> So again Christian IV appointed someone with little practical knowledge of the navy and who was an open critic of his policies.

It is clear that Christian IV was not happy with the choice. After the initial panic had abated he managed to avoid actually installing him in post. In 1629 he attempted to persuade Jens Juel to take on the post, who would have been a much more suitable candidate. Although he was not a professional seaman he had great administrative gifts and as *statholder* in Norway he had supervised the establishment of the *defensionskibe* programme and had greatly improved the recruitment of seamen in Norway.<sup>52</sup> He declined to take the post ostensibly on health grounds but it seems there was something more behind his decision. Christian IV was furious at his refusal to take the post and wrote to the *rigsråd*: ‘you should now take the opportunity to speak to him and demonstrate that he has no suitable

<sup>48</sup> Letter to *rigsråd*, 11 November 1627, *egenhændige Breve*, II, 117.

<sup>49</sup> Erslev, *Aktstykker*, II, 77–8.

<sup>50</sup> Letter to *rigsråd*, 15 November 1627, *egenhændige Breve*, II, 125.

<sup>51</sup> Steffen Heiberg, ‘Claus Daa’, *Dansk biografisk leksikon*, 4, 89–90; Lind, *Kong Kristian og hans Mænd*, 45–6.

<sup>52</sup> Steffen Heiberg, ‘Jens Juel’ *Dansk biografisk leksikon*, 7, 562–3.

excuses, since he is obliged to serve this state in whatever way he possibly can'.<sup>53</sup> Ill health was only one of the many reasons cited why he could not take up the post, which clearly did not impress the king, and he was immediately stripped of his post as *statholder* in Norway. Whatever the real reason for his refusal it did not prevent him from accepting the post of *rigsmarsk* in 1631. This left the post of *rigsadmiral* still unfilled and it is likely that the *rigsråd*, no doubt fully aware of Christian IV's earlier proposal to appoint Klaus Daa, forced his hand and compelled him to honour his previous commitment. Daa was finally appointed as *rigsadmiral* in July 1630, although he had received some orders concerning the navy the previous year.

Almost immediately he was put in charge of the fleet sailing to attack Hamburg, which he had explicitly advised against in the *rigsråd*. His lack of experience and reluctance for the fight is shown by the steady stream of letters to him from Christian IV concerning the conduct of the battle. The initial failure of the attack was blamed on him, although in his defence he could claim, with some justification, that he had received no training for his office. Daa remained in office throughout the period of armed neutrality in the 1630s and despite the *rigsråd*'s nervousness at putting the fleet to sea Daa seems to have acquitted his duties as *rigsadmiral* as well as could be expected of him. Christian IV seems to have kept a very close eye on him though.<sup>54</sup>

In 1634 the king's illegitimate son Hans Ulrik Gyldenløve was sent to Copenhagen to learn about the navy and artillery.<sup>55</sup> It has been suggested that he was in fact being groomed to take over as *rigsadmiral*, although he was still only nineteen. He did go to sea on a number of occasions in the following years but he did not take to the sea well and his navigation instructor declared that he 'had no head or talent for it'.<sup>56</sup> Quite how serious the intention was to make Hans Ulrik *rigsadmiral* is unknown. If this was in fact true then it

<sup>53</sup> Letter to *rigsråd*, April 1629, *egenhændige Breve*, II, 197–8.

<sup>54</sup> Of the 36 surviving letters addressed to his *rigsadmiraler* 32 were addressed to Daa. This may simply reflect the growing concern with naval matters in the 1630s and the fact that Daa proved the longest serving of any *rigsadmiral*, but it does seem disproportionate and suggests that Christian IV could not trust him to act on his own initiative.

<sup>55</sup> Letter to *rentemestrene*, 27 November 1634, *egenhændige Breve*, III, 302–3.

<sup>56</sup> Lind, *Kong Kristian og hans Mænd*, 299–302.

reflects poorly on Daa's competence, although it would make sense from a political perspective, with the king's son naturally expected to be much more compliant with any political objectives than Daa. Even after Daa's death in 1641 Hans Ulrik did not take up the post and it remained vacant.

Before Daa's death the *rentemester* Jørgen Vind had become increasingly more involved with naval affairs. He was a well-experienced seaman and had been a trusted naval captain during the 1620s, before joining the *rentekammer*.<sup>57</sup> His naval experience was used to good effect to help out Daa as *rigsadmiral* and a number of Christian IV's letters on naval affairs were jointly addressed to both men. After Daa's death Vind essentially became *rigsadmiral* elect, and was instructed to 'take command of Bremerholm in Copenhagen, so that the work which has been ordered is completed. In addition he shall have supervision over the navy, which lies in Copenhagen'.<sup>58</sup> He still retained his post in the *rentekammer*, however, until 1643, when preparations for the renewed offensive against Hamburg saw him installed formally as *rigsadmiral*. Like Mogens Ulfeldt, Vind appears to have been a supporter, or at any rate not an active opponent, of Christian IV's naval politics, and with his experience at sea, the king once again had a man he could trust.

Unfortunately for the king, Vind was wounded in action at the Battle of Kolberger Heide in 1644 and died of his wounds shortly thereafter. This left Christian IV with a tricky decision in the middle of a naval campaign which could prove vital to the security of the nation. The choice was again made in haste, and again the man chosen was not perhaps the most suitable. Ove Gjedde was a curious man who has gone down in Danish folklore as the leader of the first East India expedition. The truth of the matter was that it was Jens Munk who was the original choice for this mission and it seems that Gjedde exerted his influence in the court to gain this potentially valuable command.<sup>59</sup> He had no previous experience at sea and proved to be a poor master and a poor judge of the political intricacies of the mission. He was however a good self-publicist and

<sup>57</sup> Hans Fussing, 'Jørgen Vind', *Dansk biografisk leksikon*, 15, 576–7; Lind, *Kong Kristian og hans mænd*, 46–9.

<sup>58</sup> Instructions to Jørgen Vind, *Kancelliets Brevbøger*, 18 June 1641.

<sup>59</sup> Thorkild Hansen, *Jens Munk*, (København, 1965), 240–7.

retained his contacts in the court.<sup>60</sup> On his return he was awarded the post of *lensmand* to one of the larger Norwegian *len*.<sup>61</sup> Apart from his East Indian journey he had had little to do with naval affairs, although he was responsible for the transfer of the Norwegian galley fleet to Copenhagen in 1628. As a Norwegian *lensmand* he was also put in charge of a fleet of *defensionskibe* at the start of the Torstensson War but he did not distinguish himself very well in this respect. He failed to follow the king's orders, he failed to effectively blockade Göteborg and he not only failed to prevent the Dutch fleet reaching Swedish waters, but also lost one of the best *defensionskibe* to them.<sup>62</sup>

Gjedde therefore seems a strange choice for *rigsadmiral*. On the face of it he was far from an ideal candidate at such a critical time, and it has been suggested that he gained his post through his friendship with the *statholder* in Norway, Hannibal Sehested, who was at the time the king's favourite son-in-law. This certainly sounds plausible since there were other more distinguished noble admirals who would surely have had a better claim to the post. His reputation as *rigsadmiral* was poor and his only contribution to the war in 1645 was to wreck his flagship *Store Sophia*, one of the largest ships of the navy, and lose another ship to the Swedes. An investigation later found Gjedde completely to blame and recommended that he pay 70,000 Rdlr. compensation, although this was never enforced. It was later said of him that 'the *rigsadmiral* has been to India, but does not have a good name, nor is he considered a good seaman'.<sup>63</sup>

Given this damning judgement it comes as no surprise that a *rigs-viceadmiral* (state vice admiral) was appointed for the first time in 1645. The reason was ostensibly that Gjedde had broken his leg in escaping from *Store Sophia* and was unable to continue with his duties, but for the king to create a completely new position, with a seat on the *rigsråd*, within just a few months of Gjedde's appointment shows

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<sup>60</sup> He wrote his own glowing account of the Indian expedition. (Ove Gjedde, 'Fortegnelse paa alt, hvad paa den Indianske Reise forfalden er', in Schlegel (ed.), *Samlung zur Danischen Geschichte*, I, (Kopenhagen, 1772).)

<sup>61</sup> His administrative competence here later came under scrutiny.

<sup>62</sup> Th. Topsøe-Jensen, 'Ove Gjedde', *Dansk biografisk leksikon*, 5, 179–81; Lind, *Kong Kristian og hans Mænd*, 49–53, Ole Henrik Gjeruldsen, *Defensjonsskipsordningen I Norge 1630–1704*, (Oslo, 2002), 61–75.

<sup>63</sup> Lind, *Kong Kristian og hans Mænd*, 49–53.

just how worried he must have been about the competence of Gjedde. This is shown in his communications with the *rigsråd*.<sup>64</sup>

After that letter was written the *rigsadmiral* Ove Gjedde came with his fleet upon the roadstead, which his majesty has been poorly satisfied with. His majesty has now resolved to immediately appoint two vice admirals; the first should always be in position and now command the navy, the second shall be admiral on Bremerholm.<sup>65</sup> We therefore are immediately ordered to talk to Niels Trolle, to be immediately put in charge of the aforementioned first vice admiral position, although he still asserts his inexperience for such a high office.

Gjedde was clearly not a man to be trusted, and any correspondence concerning the navy thereafter referred to Gjedde in tandem with either one or both of his new vice admirals. However, the choice of Niels Trolle is again slightly curious since, although he came from a strong seafaring family, he had very little experience of the sea himself. It can only be assumed that Christian IV had been impressed with him in his earlier position of *lensmand* for Copenhagen Castle, which would have given him some insight into the navy's victualling and the workings of the Bremerholm dockyard.<sup>66</sup>

Christian IV's selection of state admirals, apart from Mogens Ulfeldt and Jørgen Vind, appears very strange. It seems likely that he was panicked into appointing both Klaus Daa and Ove Gjedde in times of war when the Danish position had become perilous, but the reasoning behind the appointment of Albert Skeel still remains a mystery. However, as we have seen, when the *rigsadmiral*'s own political views concerning the navy came into conflict with the king's they did not really have much sway. Skeel was forced to resign his position, and Daa was forced into naval operations to which he was opposed.

The absence of a *rigsadmiral* in the earlier part of his reign meant that Christian IV could basically do what he wanted with the navy on the operational side with little regard to the *rigsråd*. When it came to the civil control of the navy, i.e. its financing and the running

<sup>64</sup> *Raadet*, 31 May 1645, Erslev, *Aktstykker*, III, 69.

<sup>65</sup> I.e. the post of *Holmens viceadmiral*.

<sup>66</sup> In the early 16th century the *lensmænd* of Copenhagen Castle carried out the functions of the *Holmens admiral* and probably retained some involvement with Bremerholm even after this post was established. Jørgen H. Barfod, *Christian 3.s flåde*, (København, 1995), 124; Lind, *Kong Kristian og hans Mænd*, 53–6.

of the dockyard, the situation became much more complex. The *rigsadmiral* really had little to do with the navy's infrastructure, and this aspect of naval control fell into the hands of the *rigshofmester*, *statholder*, or to a lesser extent the *kansler*, depending on which office was filled at the time.

However no strict delineation of responsibilities can be made and, again, much depended on personality and circumstance. In the 23 years that Breide and Frans Rantzau held the post of *statholder* they each received only two direct instructions from the king concerning the navy, but Corfitz Ulfeldt in just six years received more than 70. Heiberg suggests that the reason that naval affairs were not included in Ulfeldt's oath of office was because Christian IV wanted to restrict his remit until he was sure of his loyalty, so in effect he was on probation.<sup>67</sup> However, this theory may pre-judge attitudes stemming from his later behaviour to some extent. From around 1640 Ulfeldt became increasingly more involved with naval affairs and it may be that with the king now in his sixties he was a little more willing to delegate at least some of his responsibilities to someone he thought he could trust. After becoming *rigshofmester*, Ulfeldt essentially took control of the civil administration of the navy and proceeded to exploit this position to his own advantage. However, after the suspicion of maladministration came to light at the start of the Torstensson War only a handful of instructions concerning minor details were issued to Ulfeldt and it can reasonably be assumed that the king once again took a more active role in the civil side of the navy.

The formation of the Norwegian *defensionskibe* fleet also serves to complicate matters. Although they were ostensibly privately owned armed merchantmen, they came under the direct control of the *statholder* in Norway. So from the 1630s this official also had some control over naval affairs. This became increasingly so under the statholdership of Hannibal Sehested who also radically reformed the Norwegian administration and increased his own power base. He planned to create a Norwegian navy of some 30 armed merchantmen, but in practice he was able to encourage less than half this number to be built.<sup>68</sup> Although these ships came under the direct

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<sup>67</sup> Steffen Heiberg, *Enhjørningen: Corfitz Ulfeldt*, (København, 1993), 30–31. This argument seems plausible, since although Ulfeldt received many instructions concerning the navy whilst *statholder* these are skewed very much towards the end of his statholdership.

<sup>68</sup> Gjeruldsen, *Defensionsskipsordningen*, 113.

control of the king and *rigsadmiral* in times of war, its civil administration remained in the hands of the *statholder* in Norway.

These fluid boundaries and Christian IV's ability to manipulate the appointment of officials were key factors in determining the outcome of the power struggle for the navy. In terms of policy formation he certainly held absolute sway. However, he was only able to carry out his policies freely, even when key posts in the administration were deliberately kept vacant, up to the point when large amounts of money were needed, at which point the *rigsråd* was able to influence naval policy. Arild Huitfeldt, in his history of Denmark, took pains to stress the need for a strong 'krigs Armada', stating that 'everyone knows that it is necessary, and a part of our security depends on it, since these lands are afloat',<sup>69</sup> but defence was to be its only role. The *rigsråd* consistently reiterated its belief that the navy was simply a defensive force and ought to be kept at a level that maintained the security of the state, but any wider objectives, which they considered might endanger the status quo, ought to be resisted.

Only by achieving financial independence from the *rigsråd*, or by manipulating events so that the *rigsråd*, or individual officials, were forced to accept his wishes, was Christian IV able to maintain his control over the navy and use it as he saw fit. After the *Kejserkrig* he lost his financial independence and also to a large degree his political freedom, in that he was forced to be more consistent in keeping the high offices filled, even if the men selected did not share his own political views. However, the policies of king and *rigsråd* did converge in the 1630s when both recognised the need to keep a large fleet in readiness for the security of the realm, even if their reasons were different. Christian IV wanted to re-establish Danish supremacy while the *rigsråd* members sought to protect their own interests in defending their lands from further attack. Despite the political and financial concessions granted to the *rigsråd*, the fact that both their interests roughly coincided meant that the king was able to keep political control.

The fight against Hamburg in 1630 proved a decisive phase in the king's ability to retain this power. In April the king had insisted to the *rigsråd* that a squadron ought to put to sea in the Baltic, but they in turn declared that although the fleet should be kept in

<sup>69</sup> Arild Huitfeldt, *Historiske Beskriffuelse om . . . Christiern den Første*, (*Danske Krønike*, 5 Bd.), (København, 1599) f. bij.

readiness it should not put to sea.<sup>70</sup> When Hamburg blockaded Glückstadt the *rigsråd* strongly urged the king not to proceed with any retaliation, as the navy was now the country's only line of defence. By June Christian IV had completely disregarded their wishes and not only put the fleet to sea but also removed most of it from the Baltic altogether. Thus Hamburg's attack on Glückstadt provided a convenient excuse not just to subject Hamburg to Christian IV's suzerainty, but also for him to re-exert control over the navy and to impose his will on a reluctant new *rigsadmiral*. That the king succeeded in retaining his political control is demonstrated by the increasingly heavy-handed use of the navy in the Sound and the Baltic in the late 1630s and early 1640s.

A symbolic demonstration of this power came at the royal wedding in 1634, as we have seen. But as well as impressing foreign ambassadors there was also a domestic political dimension as well. During the celebrations the nobility, including some *rigsråd* members, took part in the rituals and ceremonies in which Christian IV was honoured as the sea god Neptune,<sup>71</sup> thereby acknowledging his control over the navy. At the start of the Torstensson War Christian IV exercised his power over the navy by not only supervising the preparations for the naval campaign but by also insisting on personally commanding his fleet at sea. However, a second catastrophic military defeat severely weakened his position and the *rigsråd* sought to exploit this. In return for their granting of funds to keep the navy mobilised in 1645 the *rigsråd* extracted major concessions in relation to both the size at which the *rigsråd* should be maintained and the choice of new members.<sup>72</sup> The navy therefore became, yet again, a bargaining tool in the ongoing domestic struggle between the king and the council. The situation in 1645 again confirms that the king could only maintain control over the navy up to the point where large sums of money were required and it is to the vexed issue of naval finance that we should now turn our attention.

<sup>70</sup> Erslev, *Aktstykker*, II, 227.

<sup>71</sup> Jespersen 'Court and Nobility', 129–30; Sebastian Olden-Jørgensen 'State-Ceremonial, Court Culture and Political Power in Early Modern Denmark, 1536–1746' *Scandinavian Journal of History*, 27 (2002), 70–71.

<sup>72</sup> Letter to *rigsråd*, 17 august 1645, *egenhændige Breve*, VI, 56–7.



### CHAPTER THREE

#### THE FINANCIAL ADMINISTRATION OF THE NAVY

Danish state finance in the early seventeenth century was still essentially organised along late medieval lines and, although many improvements were instituted in the late sixteenth century, the system became increasingly inadequate for the ever-growing state budget.<sup>1</sup> The machinery of naval finance was therefore extremely rudimentary and ill defined. With the size of the navy rapidly expanding the system was stretched to its limits, and the financing of the navy became highly complex and confusing. Expenditure on the navy accounted for between a third and a half of the total state budget and so the management of the navy's finances was inextricably linked to the overall financial administration of the state, and its complex and confusing nature is a reflection of the, as yet immature, and consequently chaotic, system of state finance.

Much of the Danish state economy was based on in-kind payments. The *lensmænd* regularly paid their revenues in kind with goods produced on their land that were 'paid' directly into the central victualling store, or used locally. Crown servants and contractors could also expect to be paid at least partly in kind. When cash was used there were so many different parallel units of currency in circulation that its true value was often unclear.

In the late sixteenth century an attempt was made to rationalise the currency system. From 1582 it was based on the Daler (Dlr.) a silver coin of 30 grams that was divided into 4 Marks (Mk.) at 16 Skilling (Sk.) each. However, the Danish currency was still very much tied to the German markets and the constant inflation and fluctuation in exchange rates saw the number of skilling reckoned in the silver daler increase rapidly. The original 64 skilling daler continued in

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<sup>1</sup> Two excellent studies of Danish state finance (Søren Balle, *Statsfinanserne på Christian 3.s tid*, (Aarhus, 1992), and Jens Engberg, *Dansk finanshistorie i 1640'erne*, (Aarhus, 1972)) show that there was little structural change between the 1540s and the 1640s.

accounting practice and was known as a Sletdaler (poor daler).<sup>2</sup> In 1619 the currency system was altered again and two new daler were introduced. The silver Rigsdaler (Rdlr.) was fixed at 96 skilling and replaced the fluctuating Daler while the Kurantdaler (Kdlr.) was essentially an accounting daler reckoned at 80 skilling. Around 1626 the pressure of inflation meant that the new silver Rigsdaler coin had now also become undervalued. To account for this the coins themselves were now termed Enkende daler (Edlr.)<sup>3</sup> and were re-valued initially at 100 skilling but gradually rose to 104 skilling.<sup>4</sup> The 96 skilling Rigsdaler, however, continued as the principal accounting currency.

Foreign coins also continued in common circulation and revenues from tolls brought in coinage from all over Europe. The summaries in the account books listing all the different coinages frequently run into several pages. The most common of these was probably the gold Rose Noble, which was generally reckoned at 400 skilling. All these different currencies were liberally mixed up in the accounts and little attempt was ever made to rationalise them.

The state's accounting procedures were fairly simple in concept. Its income and expenditure were divided into 'ordinary' and 'extraordinary' categories. The ordinary income was further divided into 'certain' and 'uncertain' incomes, depending on whether they could be accurately estimated, such as *len* revenues and town taxes, or whether they varied from year to year, such as tolls and excise duties. Extraordinary income included all taxes that were raised for special purposes such as the payment of troops in wartime or for royal marriage celebrations, and had to be specially voted by the *rigsråd*. As the financial burdens on the state increased through Christian IV's reign these extraordinary taxes became ever more regular and could really be called extraordinary in name only. The state's expenditures were also divided into 'certain' and 'uncertain' categories.

Because of the great importance attached to the navy for the defence of the realm, its expenditure was classified as an ordinary expense. However, only part of its budget could be considered as

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<sup>2</sup> Hans Jørgen Marker, 'Sletdalerbegrebet i første fjerdedel af 17. århundrede', *Historie*, XV (1985), 633–40.

<sup>3</sup> Engberg, *Dansk finanshistorie*, 57.

<sup>4</sup> Rigsarkiv, Danske Kancelli, Rentemesterregnskaber.

'certain' and a large proportion of naval expenditure came under the heading of 'uncertain'. To further complicate matters expenditure only up to a certain level came under the 'ordinary' classification. If extensive manoeuvres or wars were planned then any additional funds had to be raised from extraordinary taxation.

There were two principal bodies responsible for state finance, the *rentekammer*, which was supervised jointly by the king and *rigsråd*, and the *Kongens eget Kammer* (king's own chamber), which was administered by the king alone with no government control whatsoever.<sup>5</sup> There were no formal boundaries or rules governing which expenses were paid by which institution and a lot depended on the circumstances prevailing at any particular time.

The *rentekammer* had two main functions, firstly to supervise all 'ordinary' state income and expenditure, and secondly to audit the accounts of all the other state offices. Although it was a key part of the central administration it did not monitor the income and expenditure of the state as a whole, but simply the transactions that went through its own books. Much of the state's income and expenditure was administered on a provincial level and therefore only a certain percentage of the country's total income ever made it as far as Copenhagen. The *rentekammer*'s main account books were the *rentemester-regnskaber* which were fairly rudimentary, having changed little since their introduction in the mid sixteenth century. No attempt was made at double entry bookkeeping and roman numerals were still used for all figures. The accounts were simply divided into income and expenditure, and records of any transactions were entered under their appropriate subject heading, one after the other.

The *rentekammer*'s principal role in naval finance was the supervision of its two subsidiaries, the *klædekammer* (cloth chamber) and the *proviandhus* (victualling store), which managed the payment of wages and the allocation of victuals for most naval personnel. The *rentekammer* was also responsible for the materials received and issued

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<sup>5</sup> There were in fact two other government financial institutions, the *Generalkrigszahlkommissariat*, established temporarily in 1628 and then permanently from 1637, and the *Landkommissariat*, established in 1638. Although technically a part of the central administration their organisation was purely provincial and were concerned solely with the collection of taxes and their disbursement on a local level. They had no influence over naval finances and their administration need receive little further consideration in this study.

to the navy through the *materialskriver* (clerk of materials) at the Bremerholm dockyard.

In theory the simplest element of naval expenditure to determine was the payment of wages for seamen and dockyard workers. The *klædekammer* was initially the room in Copenhagen castle where cloth was received and clothing issued to court officials which, since the navy was based in Copenhagen, also included naval personnel. Towards the end of the sixteenth century it was re-organised to become essentially the state payroll and came under the supervision of the *rentekammer*. Although the *klædekammer* was technically a sub-department of the *rentekammer*, it held its own cash reserves and was only partly funded by the *rentekammer*. It also received funds directly from the mint and certain taxes were also sometimes paid directly to the *klædekammer*.<sup>6</sup>

Despite the relatively simple remit of the *klædekammer* there were, as ever, complications which serve to confuse the role of the institution. Men were not paid simply in cash but would also receive part of their wages in kind. All state employees received their wages in a mixture of cash, clothing and foodstuffs. The level of payment depended not only on the seniority of the post but also the nature of the work, for example a carter could expect an allowance for shoes while blacksmiths would receive leather for protective clothing and up to twelve barrels of beer.<sup>7</sup> The clothing was accounted for through the *klædekammer* but the foodstuffs were administered by the *provinthus*.

The accounting system of the *klædekammer* was far from precise and the methods of payment chaotic. The officers, gunners, and the highest level of dockyard workers were paid annually, some lesser ranks were paid monthly, and others were on a day rate. Sea-going personnel were accounted for twice a year while the dockyard personnel were accounted for three times a year. Sometimes, however, men would receive little or no wages one year with the shortfall being made up in later years. The means of payment also varied widely depending on what was available. For example one shipwright received

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<sup>6</sup> Engberg, *Danske finanshistorie*, 87.

<sup>7</sup> *Kancelliets Brevbøger*, 27 Jun 1597 and 27 April 1626.

24 pairs of striped stockings one year and in another he received his entire wages in salt.<sup>8</sup>

The *provianthus* administered the issue of all foodstuffs to the navy. The issue of foodstuffs took two basic forms, firstly the payment in bulk of foodstuffs granted as wages, and secondly the daily provision of meals at the dockyard and aboard ship. To this end the *proviantskriver* (clerk of the victualling store) was responsible for receiving, measuring and documenting all supplies from the royal farms and *len*, as well as supervising all the mills, bakeries, breweries, slaughterhouses and salting works which the state operated.

It is difficult to put any clear figures to the finances of this operation, particularly as much of its business was carried out independently of any real money. The *lensmænd* delivered their produce direct to the *provianthus* which was then processed into one of the staple foods of bread, beer, dried peas and salt meat, and then loaded aboard ships or cooked in the dockyard kitchen, without any money ever changing hands. The only genuine financial transactions occurred when additional supplies had to be procured from local merchants, and when any excess food or by-products from the food processing, such as hides and tallow, were sold.

The *rentekammer* kept a record of goods supplied to the *provianthus* from the *len* but no indication is given of what was destined for naval, Court, or other use. The only surviving accounts from the *proviantskriver* are the annual account books which were arranged under headings of ship and work place. It was therefore theoretically possible to determine how much was issued to the *provianthus* and how much was then issued for naval use, but the nature of the accounts would have made this very difficult. No monetary value was ever placed on the goods either, so the job of auditing these accounts must have proved virtually impossible.

The *Kongens eget Kammer* was the second most important of the institutions involved in naval finance but because it was administered almost secretly by the king himself, and its meagre accounts are obscure and incomplete, much of its workings remain a mystery. It has in fact been described as 'an institution with no real staff, no

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<sup>8</sup> Rigsarkiv, Danske Kancelli, Udgift Conto I.a., Klædekammer regnskaber 1632/33 and 1622/23, f.42.

real accounts and no fixed place of office.<sup>9</sup> It did actually have one member of staff, the *kammerskriver*, appointed for the first time in 1632. However, the only record of its income and expenditure were the king's own diaries, and his records of transactions at the Kiel money market, which are characteristically idiosyncratic.

The primary function of the *Kongens eget Kammer* was, as its name suggests, for the king to have a certain amount of money for his own use, without the need for him to continually go to the *rentekammer*. This function was distorted greatly by the fact that its income derived principally from the vast amounts generated from the Sound and the Elbe tolls, as well as the Norwegian timber tolls, with smaller though still significant revenues coming from the ducal lands in the duchies and from the Kiel money market. This gave the king control over vast sums of money that could easily exceed those administered through the *rentekammer*.

Technically much of the money paid into the *Kongens eget Kammer* belonged to the state but this was mixed in with the king's own private revenues in a completely haphazard way. Although the king had traditionally been able to keep any surplus from the Sound tolls and use it freely without having to first ask approval from the *rigsråd*,<sup>10</sup> Christian IV manipulated the situation to his own advantage. Rather than keeping just the surplus, after all state expenditure had been met, he began to regard the revenues in their entirety as his own personal property, and ensured that they were paid directly into the *Kongens eget Kammer*. During his minority the *rentekammer* regularly received more than 50 percent of the Sound toll revenue, but after Christian IV's accession this figure dropped rapidly until by 1607 it was receiving little more than one or two percent.<sup>11</sup>

These machinations were quickly and conveniently forgotten by the king when the financial state of the country became critical. As he later stated to the *rigsråd*: 'the tolls in the Sound have always, in our ancestors, and in our time been our own money'.<sup>12</sup> Thus, rightly or wrongly, the *Kongens eget Kammer* ceased to be simply a personal

<sup>9</sup> Engberg, *Dansk finanshistorie*, 345.

<sup>10</sup> Balle, *Statsfinanserne på Christian 3.s tid*, 356.

<sup>11</sup> E. Ladewig Petersen, 'Defence, War and Finance: Christian IV and the Council of the Realm 1596–1629', *Journal of Scandinavian History*, 7 (1982), 288.

<sup>12</sup> Letter to *rigsråd*, 9 November 1647, C. F. Bricka & J. A. Fredericia (eds.), *Kong Christian den Fjerdes egenhændige Breve*, VI, 349.

reserve and became an integral part of the state financial machinery. This gave the king a great deal of power over the *rigsråd* who basically had to rely on his goodwill to pay out money to help finance the running of the state, and thus payments from the *Kongens eget Kammer* took on a political significance that served to further complicate the already chaotic system of state finance.

From the surviving diaries of Christian IV some idea of the role of the *Kongens eget Kammer* can be determined. In some years there are no payments for naval purposes whatsoever, while in others there are large one-off payments to shipwrights and contractors for ships or timber.<sup>13</sup> In addition to these payments, the Sound toll collectors also came under the king's direct control, and through them large payments were also made for the purchase of naval materials.<sup>14</sup> This would appear to suggest that the *Kongens eget Kammer* paid primarily the navy's capital expenditure, but the details of the accounts are so fragmentary that no firm conclusions can really be drawn.

The situation became even more ambiguous during the financial crises of the 1630s and 1640s. Despite frequently making payments for all manner of supplies Christian IV could suddenly state that 'iron bars, lead, and cable yarn have always been paid for out of the state's income and not the Kammer's',<sup>15</sup> even though just the previous year he had himself purchased 5000 Rdlr. worth of cable yarn.<sup>16</sup> Payments to seamen also became a regular occurrence since the rapid increase in personnel occurred before any proper provision was made to pay for them.<sup>17</sup> The fact that large numbers of ships began to be stationed on the Elbe also played its part since the king's *kammerskriver* was frequently resident in Glückstadt,<sup>18</sup> mak-

<sup>13</sup> J. H. Schlegel (ed.), 'Kong Christian IV Almanak for Aaret 1607, & 1608', *Samlung zur Danischen Geschichte*, 2 Bd. 3 Stk., 29–84; Suhm (ed.), 'Kong Christian IVdes Skrivkalender for Aarene 1614 og 16', *Nye Samlinger*, 2 Bd., 91–114; Schlegel (ed.), 'Kong Christian IV Almanak for Aaret 1621', *Samlung zur Danischen Geschichte*, 2 Bd. 1 Stk., 43–74; Rasmus Nyerup, *Kong Christian den Fjerdes Dagbøger for Aarene 1618, 1619, 1620, 1625, 1635, udgivne efter Originalerne*, (København, 1825).

<sup>14</sup> For example 2000 Rdlr. assigned for the purchase of hemp, 23 May 1641, *egenhændige Breve*, V, 89.

<sup>15</sup> Letter to *rentemester* Jørgen Vind, 7 August 1636, *egenhændige Breve*, IV, 54–5.

<sup>16</sup> Letter to *rentemestre*, 13 February 1636, *egenhændige Breve*, III, 334.

<sup>17</sup> Grants of interim payments from the king were made on 21 October 1634, 5 March & 3 May 1635, 9 February 1636, *egenhændige Breve*, III, 286, 244, 368–9; and IV, 9.

<sup>18</sup> Letters to *kammerskriver* Henrik Müller, 29 October & 14 December 1637, *egenhændige Breve*, IV, 156 & 166–8.

ing it much more convenient for payments to be made through him. At one stage Christian IV even seemed to operate as paymaster for one particular ship, with weekly payments to its crew noted in his diary. However, he was at pains to stress that these payments to seamen were merely loans, which ought to be repaid by the state.<sup>19</sup>

Thus it could be said that in broad terms the *rentekammer* supervised the payment of the navy's running costs while the *Kongens eget kammer* paid for its capital expenditure. This is of course a gross simplification as the *rentekammer* paid for a significant amount of ship-building materials while the *Kongens eget Kammer* at times paid for seamen's wages. Another way of viewing the breakdown in responsibilities is that the *rentekammer* paid for the 'ordinary' expenditure and the 'extra-ordinary' expenditure sanctioned by the *rigsråd*, while the *Kongens eget Kammer* paid for any additional unsanctioned expenses. But again this attempt at a rigid delineation breaks down since many of the payments made from the *Kongens eget Kammer* were either initially or ultimately sanctioned by the *rigsråd* and repaid by the *rentekammer*.

Any attempt to determine a strict delineation between the two institutions, though, is meaningless. In the same way that the government could be described as dyarchic then the system of state finance was also dyarchic, with each part of the government in control of its own financial institution. Given the state of ill-feeling between the king and *rigsråd* it is not surprising that the issue of naval finance was one which caused a great deal of antagonism and hostility. With this dual system of finance the two institutions became inextricably intertwined into a confused muddle, with both parties trying to use their influence for political ends at the expense of any rational approach to solving the problem of how to finance an expanding navy in a declining state economy.

Before looking at these problems in greater detail it is worth just giving one small example from the *rentemesterregnskaber* to illustrate how the different financial institutions and currencies were all inter-linked. On 31 January 1623 the shipwright David Balfour was made a payment for a small *jagt* that he had built. The entry in the accounts makes it clear that the simple matter of a payment of 150 Kdln. was

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<sup>19</sup> Payments were made to the crew of *Fladlusen* on 12 Jan, 22 Jan, 7 Feb, 17 Feb, 23 Feb, 22 Mar, and 29 Mar 1635. (Nyerup, *Kong Christian den Fjerdes Dagbøger*, 152-8) and Letter to *rentemestrene*, 9 February 1636, *egenhændige Breve*, IV, 9.



made by three different bodies, the *rentekammer*, the *Kongens eget Kammer*, and the *provianthus*, accounted for using three different forms of currency, and paid in both specie and in kind.<sup>20</sup> It is therefore no wonder that so much confusion surrounded financial matters at the time, and has continued to confuse historians ever since. It is with this in mind that we now turn to the actual financing of the navy.

### *Financing the Navy*

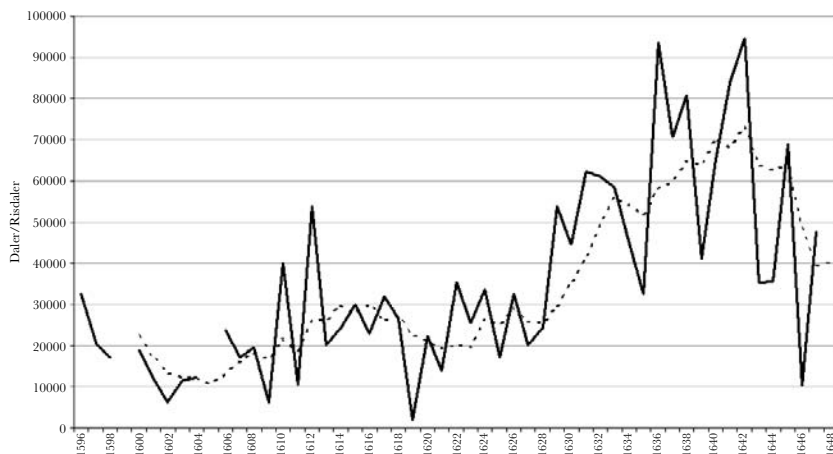
Since no separate naval accounts were kept it is virtually impossible to determine the 'ordinary' expenditure on the navy with any accuracy. What is possible, though, is an assessment of the payment of dockyard personnel and seamen's wages. These appear in the *rentemesterregnskaber* accounts at first under the heading: 'Given to His Majesty's ship captains, ship's chaplains, skippers, masters, gunners, seamen, carpenters, sawyers, and others who serve His Majesty and Bremerholm's needs'. This was later changed to: 'Paid to the *klædekammer-skriver* for the payment of wages to Bremerholm's and ships' personnel'. These figures are shown in Figure 1, and their percentage of the total *rentekammer* budget are given in Figure 2.<sup>21</sup>

Great caution must be used in interpreting these figures. They do not represent the total expenditure on the navy by the *rentekammer*, since payments to contractors and some personnel appear under other headings in the accounts. Nor do they represent the total *klædekammer* budget since it also received other funds as well.<sup>22</sup> At best they provide only an indication of the changing rate of naval funding. The most striking evidence from the graphs is the huge variation in the level of funding, with at no time a consistent rate from one year to the next. By taking a five-year rolling average some of these fluctuations can be smoothed out and a clearer picture of the trends emerges. This is pretty much as expected from our knowledge of the fluctuating size of the fleet, with a small peak at the

<sup>20</sup> Rigsarkiv, Rentemesterregnskaber, 1622/23, 78, f. 195.

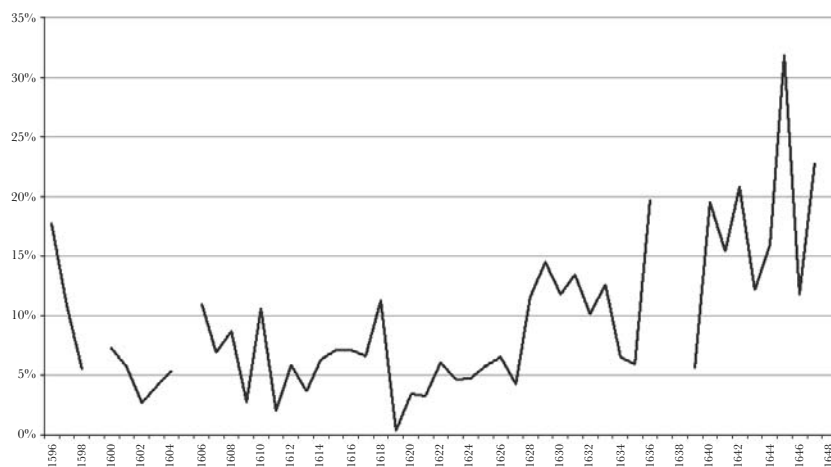
<sup>21</sup> Accounts for 1599/1600 and 1605/06 were undergoing conservation at the time of consultation. All payments in different units of currency have been rationalised to the value of Daler/Rigsdaler current at the time.

<sup>22</sup> The *klædekammer regnskaber* have not been used for this study as they are extant only after 1621, and they contain no easily accessible summaries of naval expenditure.

Fig. 1. *Payments to Naval Personnel from the Rentekammer*

The dotted line represents a five year rolling average.

(Source: Rigsarkiv, Copenhagen, Danske Kancelli, Rentemesterregnskaber, 1596/97–1647/48)

Fig. 2. *Payments to Naval Personnel as Percentage of Total Rentekammer Budget*

(Source: Rigsarkiv, Copenhagen, Danske Kancelli, Rentemesterregnskaber, 1596/97–1647/48)

time of the Kalmar War and a rapid increase from around 1630 to a high point in the early 1640s, followed by a sharp decrease after the Torstensson War.

Perhaps the most surprising evidence is the dramatic drop in naval funding from the *rentekammer* immediately after Christian IV's accession. This suggests that as well as funding an extensive naval building programme at this time Christian IV must also have taken on a large part of the running costs of the navy. This should be seen in the light of his political motives at the start of his reign to become the sole leader and owner of the navy and to limit any influence that the *rigsråd* might have over it. This continued until the outbreak of the Kalmar War, when funding from the *rentekammer* again reaches the levels of before the accession.

The percentage of the total *rentekammer* budget that these figures represent also varies wildly, from just 0.5 percent in 1619/20 to nearly 32 percent in 1645/46.<sup>23</sup> This comparison is a little misleading but it does show the general trend of a steadily increasing significance of naval expenditure within the overall state budget. Thus, although an accurate estimate of total naval expenditure is impossible over the entire reign, the payments of wages from the *rentekammer* do provide a useful tool in determining the basic trends.

Whilst the *rentekammer* did not as a rule make budget estimates it did so on a number of occasions, and these provide a more complete picture of naval funding than is possible from the actual accounts. Not all of these estimates have survived but those that do clearly show the tremendous changes that occurred during Christian IV's reign. These estimates were an attempt to reconcile the states ordinary income and expenditure and therefore contain only those items that were considered as 'ordinary' expenditures, which, thankfully for this study, most naval expenditure was. They are particularly useful in that they give monetary values to materials and foodstuffs, which did not otherwise appear in the accounts.

The first estimate dates from 1600 and gives figures for wages, victualling and some materials in a fairly rudimentary way. It also

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<sup>23</sup> These figures are based on Danish currencies only. No foreign currencies were included in the calculation and so they roughly approximate to the total domestic expenditure. Summary pages are missing in the accounts for 1637/38 and 1638/39 so the total expenditure for these years cannot be readily calculated. In 1619 only four ships sailed. Probst, *Christian 4.s flåde*, 141–2.

noted at the end a number of items which were considered too difficult to estimate as they varied so much from year to year. In this category came the building of new ships for which 'no certain sum can be allocated here, since it varies high and low according to circumstances'.

An estimate from 1608 was very similar, apart from a slight increase in costs across the board. The most significant difference is the breaking up of wages for the different personnel, but the costs of shipbuilding were still considered too variable to estimate. The next surviving estimate dates from 1630 and this reverts to the less detailed style of the earlier estimates in terms of the listing of wages but contains a number of additional items. The costs of shipbuilding are again still considered too difficult to estimate. The next estimate comes from 1642 and there are again slight variations in the grouping of wages, victuals and materials, however, for the first time a figure is given for the costs of shipbuilding. Although shipbuilding costs are included there are other flaws. The main one being that the wages for a further 906 dockyard personnel were not included in the calculation, estimated by Engberg at around 100,000 Rdlr.<sup>24</sup> It was also noted that the actual expenditure on timber was for the third year running double the given estimate and a warning was given that the cost of shipbuilding would increase if any more than the projected two ships a year were built. The 1642 estimate should be viewed with some caution since it was intended by Christian IV to demonstrate that the state could no longer support its ordinary expenditure from its ordinary income in an attempt to push through a reform of the *len* system. Even though some of the naval expenditures were so obviously underestimated, the *rigsråd* were not happy with some of the figures and suspected that the income was underestimated and the expenditure over-estimated.

In 1645 Christian IV requested the expenditure figures to be reappraised in an attempt to put costs to those items that were omitted in the previous estimate. This was completed in 1646 but unlike the previous estimates it has not survived as an official document. It does exist, however, in the notebook of the *rentemester* Oluf Daa. These revised figures must be viewed with even more caution than

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<sup>24</sup> Enberg, *Dansk finanshistorie*, 120.

the 1642 estimate. The *rigsråd* was certainly very sceptical and doubted that the total state expenditure could increase by 50 percent in the space of just four years, as the revised estimate suggested.

The results of the different estimates are summarised in Table 1. Although the estimates were not all calculated on the same basis, with some items included or excluded for different years, they provide the best available picture of total naval expenditure. It can be seen that the relation between wages and victualling and materials and shipbuilding remained fairly constant, but the actual sums involved increased dramatically. Table 2 shows naval expenditure in relation to the total *rentekammer* budget. This shows that the navy's percentage of *rentekammer* expenditure had effectively doubled in the latter half of the reign.

Table 1. *Estimated Naval Expenditure 1600–1646*

|                         | 1600   |     | 1608   |     | 1630    |     | 1642    |     | 1646    |     |
|-------------------------|--------|-----|--------|-----|---------|-----|---------|-----|---------|-----|
|                         | Dlr.   | %   | Dlr.   | %   | Rdlr.   | %   | Rdlr.   | %   | Rdlr.   | %   |
| Wages & Victualling     | 55,376 | 73  | 49,800 | 71  | 305,938 | 78  | 177,542 | 62  | 376,186 | 68  |
| Materials               | 20,840 | 27  | 20,756 | 29  | 88,109  | 22  | 93,118  | 32  | 162,895 | 29  |
| Shipbuilding            | —      | —   | —      | —   | —       | —   | 18,000  | 6   | 18,000  | 3   |
| Total Naval Expenditure | 76,216 | 100 | 70,556 | 100 | 394,047 | 100 | 288,660 | 100 | 557,081 | 100 |

Sources: Rigsarkiv, Danske kancelli, B202.a-f.; Danske kancelli, B186, Oluf Daas Optegnelsesbog, f.39–40 & 68–83.

Table 2. *Total Estimated Rentekammer Expenditure 1600–1646*

|                     | 1600    |     | 1608    |     | 1630    |     | 1642    |     | 1646    |     |
|---------------------|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|
|                     | Dlr.    | %   | Dlr.    | %   | Rdlr.   | %   | Rdlr.   | %   | Rdlr.   | %   |
| Navy                | 76,216  | 29  | 70,556  | 33  | 394,047 | 64  | 288,660 | 47  | 557,081 | 59  |
| Court etc.          | 148,716 | 57  | 121,285 | 57  | 194,988 | 32  | 308,303 | 50  | 371,834 | 40  |
| Arsenal & Garrisons | 35,384  | 14  | 22,646  | 10  | 26,197  | 4   | 21,336  | 3   | 9,563   | 1   |
| Total               | 260,316 | 100 | 214,487 | 100 | 615,232 | 100 | 618,299 | 100 | 938,478 | 100 |

Sources: Rigsarkiv, Danske kancelli, B202.a-f.; Danske kancelli, B186, Oluf Daas Optegnelsesbog, f.39–40 & 68–83.

The huge increase in funding between 1608 and 1630 is remarkable, representing more than a five-fold increase. This can be explained largely by the fact that the size of the navy had more or less doubled in this time. The sharp rise in the cost of manning probably relates to the practice of retaining seamen all year round in Copenhagen, rather than billeting them in the provinces, that was instituted in 1616. To some extent the magnitude of the increase is exaggerated as it shows central government meeting costs that were previously met locally and therefore not attributed to naval expenses. In addition inflation and the change in the currency system would also have had an effect. The increase between 1642 to 1646 can partly be explained by the inclusion of the wages and victuals that were omitted in the 1642 estimate, but whether these would account for a doubling of the estimated expenditure is debatable. It is not wholly infeasible though, as a further estimate from 1656, albeit much less detailed, gives a remarkably similar figure of 543,500 Rdlr. for the total naval expenditure.<sup>25</sup>

The percentages are also a little misleading since the total estimated expenditure is only the 'ordinary' expenditure, and does not include extraordinary expenditures, such as the new standing army from 1637. So while in the 1630s and 1640s the navy accounted for between 50 to 60 percent of the ordinary budget it represented far less in terms of the overall state budget. Unfortunately, since many of the extraordinary expenses were administered outwith the *rentekammer*, any attempt to calculate the total state budget is impossible. This also explains why the expenditure on the army decreases in percentage terms so dramatically after the establishment of the *Generalkrigszahlkommissariat* in 1628, since this administered the bulk of army expenditure on a purely provincial basis.

It should also be noted that the arsenal was considered as a completely separate entity in these estimates. Since a large proportion of the arsenal was concerned with naval ordnance the total naval budgets have been underestimated to a certain extent. However, no distinction was made between land and naval ordnance, and it would be impossible to try and calculate the percentage of the arsenal budget that related to the navy.

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<sup>25</sup> Rigsarkiv, Danske kancelli, B202.g.

Having now come to some kind of estimate of naval expenditure, albeit rather flawed, it is worth now looking briefly at where the money came from which financed it. It is often stated as a truism in works on Danish history that the navy was paid for by the Sound dues. This is indeed partly true but the real situation was clearly far more complicated than that. Very little of the state's ordinary income was ever ear-marked for its ultimate use, so before looking specifically at funding for the navy we must look first at the state's income as a whole. The income of the state can be divided broadly into three categories: *len* revenues; taxes; and tolls and excise.

The *len* were essentially a hangover from medieval state administration. They were noble-run administrative regions that were liable to pay revenues to the state. Much of their revenues were used locally to pay for government officials and the army and only when these expenses were met was any excess sent to the *rentekammer* or the *provianthus*. In practice by far the largest proportion of *len* revenues sent to Copenhagen were paid in kind.

Taxes comprised three main elements. The principal form of taxation were the 'extraordinary' *landeskatter* (land taxes), which were voted by the *rigsråd* on a more or less annual basis. They were nominally raised for some particular purpose, such as royal weddings, expeditions, war, or for special building works, and depending on the perceived need, a single, double, or half tax was raised.<sup>26</sup> However, the taxes raised did not necessarily all go to their intended use and ended up as general revenue in the state coffers. They were paid either into the *rentekammer*, if paid in cash, or to the *provianthus*, if paid in kind. However, from 1637 these taxes were reorganised and renamed *unionsskatter* (union taxes). From this date they were raised solely to pay for the new standing army and were administered on a purely provincial level by the *generalkrigszalkommissariat*, so the *rentekammer* was thereafter deprived of this form of taxation for naval use.

The second form of tax was a municipal tax raised from towns in return for their privileges as market towns. These were 'ordinary' taxes collected on an annual basis without the need to be voted specially. The third form of taxes were the *stænderskatter* (estate taxes). From 1638 the estates were granted powers to raise their own taxes which were voted by them and paid to a provincial *landkommissær*.

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<sup>26</sup> A single tax raised in the order of 100,000 Rdlr.

Like the new *unionsskatter*, these taxes never reached the *rentekammer* or the *provianthus*, and therefore did not contribute to naval funding.

Tolls and excise were divided into two main groups. The *rigets og kronens tolde* (state and crown tolls) comprised the tolls raised from exported goods, primarily cattle from Denmark and timber from Norway, harbour dues, and general excise duties. These revenues were principally paid to the *rentekammer* or *provianthus*, although some were paid to the *Kongens eget Kammer* or used directly by the toll collectors to pay for goods and services. The *strømtolde* (channel tolls) were those tolls imposed on ships using the state's channels, principally the Sound and the Elbe. These were paid primarily into the *Kongens eget Kammer*, although large payments were often made directly by the toll collectors, and occasionally revenues were deposited in the *rentekammer*.

All these revenues could really be said to have gone into the state's general funds, whether they were paid to the *rentekammer*, *provianthus*, or the *Kongens eget Kammer*. In addition there were also certain revenues which were raised specifically for the navy's use. The *bådsmandshvervningskat* (recruitment of seamen tax) was a tax paid by the coastal towns to exempt them from supplying seamen to the navy. The level of taxation depended on the number of men in each town engaged in fishing or shipping, with 1 Rdlr. to be paid for every man and 1/2 Rdlr. for every boy engaged in these trades.<sup>27</sup> The *bådsmandsvåningstold* (seamen's accommodation toll) was a toll imposed on all ships entering Danish harbours. It was raised initially in 1631 to pay for the building of the Nyboder seamen's accommodation in Copenhagen, but from 1640 only a certain amount was reserved for this purpose and the remainder was used for general naval expenses.<sup>28</sup>

There were also the extraordinary taxes voted by the *rigsråd* explicitly for naval use. These usually took the form of a *madskat* (food tax) or a *kornskat* (corn tax) and the foodstuffs raised by this method were delivered to the *provianthus*. An example of one such tax comes from 1635 when the *rigsråd*, following a proposal from Christian IV, agreed that ten ships should set sail to rid the seas of pirates. To provide bread and beer for these ships each freeholder in Denmark-

<sup>27</sup> *Kancelliets Brevbøger*, 15 August 1633.

<sup>28</sup> Engberg, *Dansk finanshistorie*, 245-7.



Norway had to give a sixth of a barrel of rye and a third of a barrel of barley, or its cash equivalent.<sup>29</sup>

There is no way of determining how much each of these elements contributed to the overall funding of the navy. However it was evident that by the 1630s the income of the state was failing to meet the requirements of its expenditure. The budget estimates between 1600 and 1608 show that the state's ordinary income comfortably met the requirements of its expenditure. This surplus, however, was due mainly to the inclusion of the Sound toll revenues, and with Christian IV increasingly diverting these large sums into his own coffers the ensuing crisis became inevitable. Significantly the later estimates which showed heavy deficits did not include the Sound toll revenues in the state's ordinary income.

This enabled the king to gain a level of financial independence previously unknown. This independence was used to finance various projects which he later claimed to have been in the state's interest, and therefore he ought to be reimbursed by the *rigsråd* by the raising of extraordinary taxes. Some of the projects, such as defence works, were undoubtedly in the national interest, but the large sums expended on pursuing his policies in northern Germany could only be so described very loosely. This policy meant that some projects were effectively paid for twice and amounted to what Ladewig Petersen has called a 'cumulative extortion' of the *rigsråd*.<sup>30</sup> In effect Christian IV was increasing his own liquidity at the expense of the state in order to pursue his own foreign policy agenda.

The signs of the growing crisis had been recognised in the early 1620s when Christian IV tentatively floated the idea of *len* reforms.<sup>31</sup> These came to nothing, but it was becoming clear that something had to be done to balance the ordinary budget. The trouble was that the income from the *len* had stabilised while state expenditure was rapidly increasing. Ladewig Petersen has analysed the collapse of the *len* system in depth and has shown that the proportion of *len*

<sup>29</sup> Raadets Betænkning, 3 December 1635, Kr. Erslev, *Aktstykker og oplysninger til rigsråad og stændermødernes historie i Kristian IV's tid*, (København, 1883–90), II, 405.

<sup>30</sup> In actual fact the state only paid once, through payments from the *Kongens eget Kammer*, and the taxes raised were used solely to restore the king's capital reserves. Ladewig Petersen, 'Defence, War and Finance', 301.

<sup>31</sup> Steffen Heiberg, 'De ti tønder guld: Rigsråd, kongemagt og statsfinanser i 1630'erne', *Historisk Tidsskrift*, 76, (1976), 26.

revenues to the total state budget dropped from around 70 percent in 1600 to just 30 percent in the 1640s.<sup>32</sup>

The *Kejserkrig* marks the turning point in the transition of the state economy. The *Kongens eget Kammer* quickly became exhausted after the initial phases of the war, and *len* and toll revenues were drastically affected by the overrun of Jutland. The Kiel money market, where Christian IV had previously been able to raise finance, was also suspended. Therefore the only way of raising finance to extricate Denmark from the war was to increase tax and toll revenues and to obtain credit. However, before granting any new taxes to pay for what they considered was Christian IV's folly, the *rigsråd* ensured that they would thereafter control all war finance.<sup>33</sup>

The king had clearly lost the financial independence which he had so carefully cultivated, and the *rigsråd* had gained important new fiscal powers. But, in an effort to regain his independence, Christian IV, before agreeing to sign the Treaty of Lübeck, sought assurances from the *rigsråd* that he would be granted 'ten barrels of gold' (one million Rdlr.) in compensation for the personal expenses he had incurred during the war. The *rigsråd* reluctantly agreed to this condition and the money was to be raised by taxation and paid over a number of years. This did not in fact help Christian IV much, since most of the 'ten barrels of gold' were assigned to state expenses long before they ever reached him. At the same time revenues from the Sound tolls were being affected by the escalating war in Europe and the prospect of Christian IV restoring his previous position of financial strength was poor. This also helps to explain why Christian IV was so keen to pursue the attack on Hamburg in 1630 and impose tolls on the Elbe.

The growing financial crisis was therefore as much a consequence of the power struggle between the king and the *rigsråd* as the need to pay off war debts. The financial position of the state was undoubtedly poor but, rather than working towards a common solution, both sides sought to protect their own interests and the financial crisis

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<sup>32</sup> E. Ladewig Petersen, 'From Domain State to Tax State', *Scandinavian Economic History Review*, 23 (1975), 116–48; 'War, Finance and the Growth of Absolutism: Some Aspects of the European Integration of Seventeenth Century Denmark', in G. Rystad (ed.), *Europe and Scandinavia*, (Lund, 1983), 33–49.

<sup>33</sup> Ladewig Petersen, 'Defence, War and Finance', 308–13.

steadily deepened. The poor financial position at the end of the war was made even worse during the 1630s when the country entered a period of perpetual armed neutrality, with expenditure on naval hardware and personnel increasing at an alarming rate.

Despite the *rigsråd* agreeing that the navy provided the only effective means of national defence, and that it ought to be strengthened, they were unwilling to grant the funds needed to achieve this and complained of the increasing amount of money being spent on it. Christian IV in turn retorted that most of the new shipbuilding costs had been met at his own expense:

In recent times the navy has been strengthened and kept in readiness by using our woods in Holstein, the timber from which *Tre Kroner*, *Victor*, *Recompens* and *Justitia* have been built, all the others which were built in Itzehoe were paid with money from the Kiel money market, so that they have not cost the state one Daler.<sup>34</sup>

The strain on the *Kongens eget Kammer* was becoming ever greater as the naval expenditure was continuing to rise while the *rentekammer's* revenues at best remained static. The situation became even more critical after 1637 when the 'ten barrels of gold' had effectively been paid off and extraordinary taxation was decentralised and put in the hands of provincial commissioners, ensuring that the burden of naval expenditure fell even more heavily on the *Kongens eget Kammer*. As a consequence, the disputes over naval funding started to become even more bitter and acrimonious.

By 1640 things were becoming so acute that ships were prevented from sailing on voyages that would take them away from the *len's* supply of rye and barley, since there was no money to pay for any excess.<sup>35</sup> The rumoured Dutch attempt to break the Sound shortly afterwards demonstrated the need to maintain a strong navy, and Christian IV used the opportunity to submit the following plea to the *rigsråd*.<sup>36</sup>

Since I have for a long time now, with great injury, kept Bremerholm, the navy and all that depends on it, powerful, because the Crown's income cannot stretch to what, time after time, is spent on it, as can

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<sup>34</sup> In fact all these ships had been built early in his reign. Letter to *rigsråd*, 12 April 1633, *egenhændige Breve*, III, 102–3.

<sup>35</sup> Letter to Corfitz Ulfeldt, 17 January 1640, *egenhændige Breve*, IV, 288–9.

<sup>36</sup> Letter to *rigsråd*, 26 May 1640, *egenhændige Breve*, IV, 343–4.

be seen from the attached account of the daily expense and no more, compiled by our *rentemestre*. From this it is apparent that I cannot suffer the like of such experience without my total ruin, which is why the *rigsråd*, with all expediency, shall consider means whereby I can recoup my great outlay again, so that the navy should still be kept powerful, as is proper.

The *rigsråd* duly considered this request and, after first giving excuses as to why taxes could not be raised, came up with a formula for increasing various tolls to raise finance that included such petty measures as a levy on festive beer and an increase in the toll for a fat pig.<sup>37</sup> Other than that the *rigsråd* claimed it could do no more to help. Clearly these measures would have little impact on the large sums needed and the intention was made clear that the king ought to use the revenues from the Sound tolls to meet the difference. In return for these measures the *rigsråd* asked the king to ensure that he kept on good terms with the 'neighbours' and preserve the current state of peace.<sup>38</sup>

Not surprisingly these measures did little to alleviate the problem, and shortly afterwards Christian IV was again complaining about the lack of money to pay seamen, saying that 'God knows where to find the money for them'.<sup>39</sup> He was becoming increasingly more irritated and emotional about the whole subject and a few weeks later he further complained that:

For the 300 seamen being recruited money must be found, otherwise it is to me the *rigsråd* comes for money. If it continues any longer the way it has, then it is poor work being king in Denmark. If I have to put money in every year, then we shall be in real trouble. Are others to take the profit and I the pain?<sup>40</sup>

Eventually he ordered the 1642 budget estimate to be carried out, with the threat that unless improvements could be made then Sweden would provide a good example, where there were few *lensmænd* and the Crown's income proved much higher.<sup>41</sup> Christian IV had in fact

<sup>37</sup> Chr. Bruun (ed.), 'Rigens Raads Betænkning til Kong Christian IV. om Tilveiebringelsen af Penge til Holmen og Flaaden, 1640', *Danske Samlinger*, 6 (1870–71), 81–84.

<sup>38</sup> Ironically it was the raising of Sound tolls that in large part precipitated the Torstensson War.

<sup>39</sup> Letter to Corfitz Ulfeldt, 30 December 1641, *egenhændige Breve*, V, 162.

<sup>40</sup> Letter to Corfitz Ulfeldt, 18 January 1642, *egenhændige Breve*, V, 169.

<sup>41</sup> Letter to Jørgen Vind, 17 February 1642, *egenhændige Breve*, V, 177–82.

long been trying to push through a reform of the *len* system and the 1642 and 1646 estimates were intended as a means of proving that a reform was necessary. Although the *rigsråd* disputed the figures they did in the end approve a limited reform in 1646 but not without further histrionic displays by the king who at one stage threatened to sell the navy if help was not forthcoming:

If I shall get no more help than hitherto to keep it in being, then it is little wonder that I loose the desire to look after it, but rather eventually sell it while it can still be used by others, for it cannot go on in the present way.<sup>42</sup>

The reforms came too late to have any impact on the funding of the navy during the Torstensson War, which appears to have been provided by the *Kongens eget Kammer*, and by using loans and credit from merchants. However the controversy over naval funding was taken up again with vigour at the end of the campaign and the king's desire to recover his autonomy was, if anything, strengthened.<sup>43</sup> He ordered the *rigsråd* to investigate 'what moderation in expense the good lords think can be made to the navy'.<sup>44</sup> The recommendation was that the size of the state navy ought to be reduced to come into line with the available funding and more reliance placed on armed merchantmen.<sup>45</sup>

They considered that the navy should now only cost 300,000 Rdlr. annually,<sup>46</sup> which should be paid for by the king. Christian IV in turn declared that the anticipated revenue of 300,00 Rdlr. from the Sound tolls was only just sufficient for his own needs and that the navy ought to be funded by other means.<sup>47</sup> The *rigsråd* replied in characteristic manner saying that if they could determine the size and number of ships (i.e. essentially take over control of the navy), then they would be willing to grant an increase in a number of tolls for the navy's use.<sup>48</sup>

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<sup>42</sup> Letter to Christen Thomesen Sehested, 20 November 1642, *egenhændige Breve*, V, 265.

<sup>43</sup> Letter to *rigsråd*, 11 September 1645, *egenhændige Breve*, VI, 73–4.

<sup>44</sup> Letter to *rigsråd*, 11 April 1647, *egenhændige Breve*, VI, 266.

<sup>45</sup> Ove Giedde and Niels Trolle to *Rigsråd*, 10 May 1647, Erslev, *Aktstykker*, III, 361–2.

<sup>46</sup> Letter to Christen Thomesen Sehested, Ove Giedde, Hannibal Sehested and Niels Trolle, 1 June 1647, *egenhændige Breve*, VI, 283–5.

<sup>47</sup> Letter to *rigsråd*, 5 June 1647, *egenhændige Breve*, VI, 286.

<sup>48</sup> Raadets Betænkning, 17 Juli 1647, Erslev, *Aktstykker*, III, 398.

This proposal did not go down well with Christian IV and the argument was taken up again in more emotional vein several months later when he declared that other monarchs in the world were allowed to keep their own money and that while he was paying for everything the *lensmænd*, with their freedom from taxation, were paying for nothing. He also reiterated that he felt that the state's resources ought to be used to pay for the navy as a matter of course.<sup>49</sup> However, the death that year of his elected successor, Prince Christian (V), meant that he was in a weakened position if the election of his younger son Frederik was to be secured. A number of the *len* reforms were withdrawn, and it is likely that he was forced to meekly accept whatever the *rigsråd* offered in terms of naval funding. In any case Christian IV was dead within a few months and in Frederik III's accession charter the *len* reforms were reversed and specific new powers were granted to the *rigsråd* over the navy so that the dispute could not continue as it had done.

In many ways this crisis in naval funding was artificial, since the main focus of the debate was whether the king or the state should foot the bill, and as we have seen much of the king's wealth was in fact technically state revenue. The real crux of the matter was that Christian IV had engineered his financial independence in the early years of his reign at the expense of the state, but when the state was in desperate need for financial assistance he was unwilling to lose this independence or to concede any further powers to the *rigsråd*. The situation was not helped by the fact that without any formal accounting procedures to give an exact and objective overview of naval finance the arguments became highly subjective and emotional, with each side desperately fighting its own corner. There can be no doubt, though, that Christian IV genuinely came to believe that the Sound dues were his own income, and the argument essentially came about as a result of his own delusions.

It would be wrong, however, to suggest that there would have been no crisis if king and *rigsråd* had co-operated. The internal state economy could no longer cope with the burdens being placed upon it since the *len* revenues could not easily be improved and the tax burden on the population was reaching saturation point. There was

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<sup>49</sup> Letter to *rigsråd*, 9 November 1647, *egenhændige Breve*, VI, 349.

a desperate need for a sweeping reform of the *len* system, made even more critical after revenues from Halland were lost after it was ceded to Sweden in 1645.

As a result an ever-increasing reliance was placed on private contractors for the supply of naval materials, especially on those that could supply goods or services on credit. Although a certain amount of goods had always been procured from private merchants the *Kejserkrig* saw a rapid increase in this means of supply. This trend escalated dramatically in the 1630s,<sup>50</sup> and by the 1640s naval supplies were just as likely to come from private merchants as from the *len*. This new policy brought about increased opportunities for fraud and embezzlement, which further deepened the crisis in naval finance.

### *Corruption*

The state officials who could most easily indulge in embezzlement were those that handled large amounts of money or materials with a certain degree of independence. In terms of the naval administration this situation was found in the *klædekammer* and the *provianthus* and it comes as no surprise to find that the two officials who most regularly came under suspicion in the naval administration were the clerks of the *klædekammer* and the victualling store.

In terms of outright theft the *klædekammer* provided the best opportunity but although two of the clerks came under suspicion neither was ever convicted. In the victualling store the opportunities for corruption were much greater. Although little cash passed through its books the sheer amount of goods processed, and the poor accounting procedures employed, made it relatively easy for the *proviantsskriver* to conspire with suppliers and falsify measures to siphon off goods for his own profit. It is telling that virtually all of the men appointed to the post of *proviantsskriver* during Christian IV's reign came under suspicion at one time or another of either incompetent maladministration or fraud. However, given the nature of the accounting procedures it was virtually impossible to prove anything and although so many came under suspicion and were removed from office, very

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<sup>50</sup> Payments to contractors in the first four years after the war more than trebled. (Heiberg, 'De ti tønder guld', 43).

few were actually charged. The various dockyard clerks were also able to take advantage of their positions, such as Jakob Jensen, of whom it was accused that 'the *deleskriver*, with another, has deliberately made a contract which defrauds me of 1000 Rdlr.<sup>51</sup>

It was less easy for corruption to occur in the *rentekammer* but many of its officials also had private business interests, or were family members of Crown suppliers, and inevitably there was a degree of favouritism and bribery involved in many of the contracts. However, despite its prevalence, corruption at this level was of relatively minor consequence when compared to the deeds of Corfitz Ulfeldt. His position as leader of both the *rentekammer* and the civil administration of Bremerholm put him in a position that was ideal for indulging in large-scale embezzlement. Before taking up office he had been a struggling nobleman with large debts but within just a few years he had become one of the wealthiest men in Copenhagen. This sudden rise in his fortunes was impossible to explain simply from his wages, and it became an open secret that he was earning the majority of his wealth from his illegal dealings.

Suspicious over his dishonesty were aroused in Christian IV as early as 1641 when he stated that Ulfeldt was largely responsible for the poor state of the state's finances since he had 'soaked up a barrel of gold'.<sup>52</sup> It was not until he became *rigshofmester* in 1643, though, that his corruption reached an unprecedented scale. As *statholder* he had to get all contracts countersigned by the two *rentekammer* clerks but as *rigshofmester* he could authorise any contract himself.

When Ulfeldt became *rigshofmester* Christian IV no longer became involved in the placing of contracts: 'since Ulfeldt has been *rigshofmester*, I have not concerned myself with any business with merchants'.<sup>53</sup> A select few merchants began to be favoured by Ulfeldt as Crown suppliers and prices were set artificially high and the difference allegedly split between Ulfeldt and the contractors. By 1644 Christian IV had begun to realise what was going on and was complaining:

<sup>51</sup> Letter to *rentemestrene*, 6 November 1634, *egenhændige Breve*, III, 289.

<sup>52</sup> Letter to Christen Thomesen Sehested, 8 December 1641, *egenhændige Breve*, V, 152.

<sup>53</sup> H. D. Lind, 'Underslæb paa Bremerholm under Korfits Ulfeldts Finansstyrelse', *Historisk tidsskrift*, 6 Rk. V bd. (1895), 39.



That only a few here in the town get all the contracts no one is in doubt. Now, whether they contribute more than the others, who have had no advantage from the contract is yet to be ascertained. In my youth whoever would give the best deal got the contract, and they even had to wait for the money until it was available.<sup>54</sup>

Ulfeldt responded to this by saying that because the quantities of materials now required for the navy were so great only the largest suppliers would be able to meet the demand,<sup>55</sup> which was to some extent true. However, the scale of contracts awarded to a small handful of merchants was quite exceptional and it was generally accepted that Ulfeldt was taking a large cut of the contract price for himself.

Strangely no direct allegations were ever brought against Ulfeldt during Christian IV's reign and it was not until after Christian IV's death that the true extent of Ulfeldt's embezzlement became known. At first his administration of toll collection came under scrutiny. Then, when it was discovered that he had authorised a contract worth 95,000 Rdlr. for a ship which was later valued at only 63,000 Rdlr., an investigation was immediately ordered into his administration.<sup>56</sup>

During his period in office Ulfeldt had not made many friends among his fellow noblemen. He acted in a vain and pompous manner that fuelled resentment at his growing affluence, whilst everyone else around him was feeling the harsh effects of the years of financial crisis. When a *rigsråd* commission was set up in 1650 to carry out the investigation into his affairs it was little wonder that its members proved so hostile to him, and were so thorough in their efforts to find fault in his administration.

When the commission's findings were made known in 1653 they adjudged that goods had been regularly purchased at too high a price, accounts and receipts had been falsified, and Ulfeldt had had his own clerk at Bremerholm, working without a royal appointment. The question of timber supply proved of particular interest to them and they found that:

of timber alone in a six-year period from 1642 to 1648 it is noted that nearly 1,300,000 Rdlr. was supplied, despite not one ship being

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<sup>54</sup> Letter to Christen Thomesen Sehested, November 1644, *egenhændige Breve*, V, 530–1.

<sup>55</sup> Chr. Molbech, 'Om Corfits Ulfeldt som Landsforræder og om hans politiske Charakteer og Handlinger', *Historisk tidsskrift*, 1 rk. III bd., 453.

<sup>56</sup> Steffen Heiberg, *Enhjørningen: Corfitz Ulfeldt*, (København, 1993), 104.

built with it, nor any large land building being built; while it is estimated that to repair one ship would need 36,000 Rdlr. of timber and for another 35,000 Rdlr.<sup>57</sup>

The timber supplied regularly lay in the timber yard for over a year without being checked, which meant that most of it could not be traced back to any one supplier, making it easy to falsify the accounts by making double or triple payments for the same material. The prices paid for timber were often ridiculously high, averaging more than twice the market value, but for the select band of suppliers in Ulfeldt's pocket the contract price could be as high as eleven times the market price.

The circumstantial evidence was overwhelming and the fact that Ulfeldt fled the country in 1651 further pointed to his guilt, but surprisingly the commission did not find any direct evidence that he had been guilty of fraud. Lind suggests that the scale of embezzlement was not actually as large as the hostile commission had made out, and Engberg further points out that the level of Ulfeldt's embezzlement, probably totalling in the region of one million Rdlr., was in fact fairly small compared to some European government officials.<sup>58</sup> The whole Ulfeldt story, though, is highly charged and many of the later allegations levelled against him were influenced by his subsequent defection to Sweden and his traitorous behaviour leading to the Peace of Roskilde in 1658. He was undeniably corrupt, but whether he was as corrupt as he is sometimes made out is a matter of contention.

In comparison to other countries though Denmark was surprisingly free from corruption. England and Spain were notorious for the scale of corruption in their naval administrations at all levels. This was due mainly to their dependence on contractors for virtually all supplies. In Denmark the *len* system by-passed many of the opportunities for corruption but obviously did not eliminate them altogether. Apart from petty pilfering, only officials in the higher offices had any opportunity to practice theft or fraud on any significant level, and with an administration that had so few high-level officials the possibilities for corruption were minimised. However, it did mean

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<sup>57</sup> Lind, 'Underslæb paa Bremerholm', 372–3.

<sup>58</sup> Lind, 'Underslæb paa Bremerholm', 367–410; Engberg, *Dansk finanshistorie*, 148–50.

that for those few who did hold high office, such as Ulfeldt, the opportunities were very great indeed. It is also notable that the majority of the corruption stems from the time when private contractors were being used on a much greater scale than ever before. N. A. M. Rodger makes the point that contemporaries took it for granted that officials would profit from their positions and that the real measure of corruption was whether the crown was getting value for money from the operation.<sup>59</sup> Clearly in the case of Ulfeldt this was not the case, but elsewhere the situation was no so clear-cut, and although Christian IV tried to minimise any loss to the state, a certain amount of profit-making among naval officials was accepted.

In conclusion, it can be said that the financial administration of the Danish navy was chaotic and to some extent corrupt. The financial institutions of government were inefficient and inadequate for their tasks, and their accounting procedures were confused and difficult to understand. No one in government had any idea of the true state of naval finances, which meant that when problems arose there was no easy way of resolving them. The lack of any clear accounting practices and the dual financial leadership also led to a situation where naval finance became a highly contentious political issue, with the king and *rigsråd* acting against each other rather than working together.

There really is little positive that can be said of the navy's financial administration. The *len* system did provide a means of supplying the navy to some degree without the need for large sums of money, but this system was of limited value and far too rigid to cope with a rapidly expanding navy. In terms of keeping the navy running, the financial administration was muddled, inefficient and wasteful, and came very close to breaking down altogether. The navy had expanded to a much higher level than the administration was designed for and it is therefore little wonder that so many problems were encountered in the attempts to keep it financed.

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<sup>59</sup> N. A. M. Rodger, *The Safeguard of the Sea: A naval history of Britain 660–1649* (London, 1997), 332.



## CHAPTER FOUR

### THE DESIGN AND PROCUREMENT OF THE NAVY'S SHIPS

Danish native shipbuilding talent in the late sixteenth century was relatively poor beyond the building of small coastal and fishing vessels. The geography of Denmark and Norway ensured that a shipping industry developed, but most Danish merchant ships were small and involved only in internal trade. The vast majority of Danish exports were carried by foreign ships and even the small number of large Danish ships involved were more than likely built in the Netherlands. There was therefore no great commercial impetus to develop Danish shipbuilding. Danish merchants could quite easily secure passages on the many ships passing through the Sound, so why should they go to the expense, and added risk, of building and operating their own ships? As Fynes Moryson explained in 1593:

their marchants use not to Export or fostre Comodities by any long Navigation into forrayne parts, because the Shipps of all nations passing the Sounde supply their wants, and export their dried fish and like Comodities they can spare. So the marchants haue no strength of well armed shipping.<sup>1</sup>

Christian IV did try to foster the development of the Danish merchant navy through various mercantilist schemes, but these had limited success, and even by the end of his reign the numbers were very small. In 1639, of the ships whose tonnage was known, nearly 90 percent were under 50 lasts (100 tons),<sup>2</sup> and a survey in 1642 identified only 71 Danish merchant ships measuring over 30 lasts (60 tons).<sup>3</sup> Although carvel construction techniques were used in the

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<sup>1</sup> Fynes Moryson, *The fourth Part of an Itinerary: Of the Comonwealth of Denmarke*, Booke II, Chap. II., Library of Corpus Christi College, Oxford, MS. C.C.C.94, f. 242–3.

<sup>2</sup> Ole Degn & Erik Gøbel, *Skuder og kompagnier: Dansk Søfarts Historie 2, 1588–1720*, (København, 1997), 46.

<sup>3</sup> Jørgen H. P. Barfod, *Danmark-Norges handelsflåde 1650–1700*, (Kronborg, 1967), 51.

Baltic in the sixteenth century Danish and particularly Norwegian merchant shipbuilding was still to a large extent based on clinker construction, which was no longer suitable for the large size of ships needed for the navy. Christian IV could not therefore rely on native shipbuilders to build the navy's warships and Moryson further noted that 'it seemes they have no very good Shipwrights, for the Chiefe Shipwright who then built the Kings Shippes was an Englishman named Matson'.

To obtain suitable ships for the navy Christian IV therefore had to either bring in shipbuilding expertise from abroad, as indicated by Moryson, or purchase warships from foreign yards. The purchase of ships was problematic since they were not always readily available when needed and their quality could not always be guaranteed. Commissioning ships from foreign yards could also create serious diplomatic problems and carried an element of risk, especially as the largest shipbuilding suppliers were the Netherlands and England who were both antagonistic towards Denmark's toll policies.

Christian IV therefore adopted two principal strategies. He hired foreign shipwrights to work within the state system and he also commissioned ships from Dutch private contractors who had been encouraged to establish shipyards in Holstein. Thus, he acquired expert skills from abroad, but maintained political control over the shipbuilders by having them build on lands over which he held sovereignty or suzerainty.

### *The Design Process*

Having already seen how much Christian IV was obsessed by detail and hated delegation, it comes as no surprise to find that the design of all warships was subject to his approval. He had a strong working knowledge of shipbuilding and as part of his education the young prince Christian worked with a shipwright to build a small three masted ship. He was thoroughly competent in understanding ships' plans and models and is known to have designed some vessels himself.<sup>4</sup> More normally his shipwrights submitted their designs to him,

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<sup>4</sup> His design for two barges built in 1640 is still extant and although the vessel depicted is fairly basic it does show that he understood the basics of ship design. Rigsarkiv, Søetatens kort- og tegningssamling, Des. E.1.

either in the form of plans or three-dimensional models.<sup>5</sup> There are a number of ships plans in existence that offer an insight into the design of Christian IV's ships. These show that they were mostly designed using English techniques but that there was also a strong Dutch influence.<sup>6</sup>

The most detailed description of the use of models comes from the Koldinghus *len* accounts for 1610/11, in which one heading reads:<sup>7</sup>

Issued and paid for one ship's model, which his majesty has himself traced out and sketched in the long room here in the castle, and which in his own presence has had carved, planed and finished from fir deals, laths and spars, and for the ironwork, spikes and nails, along with the under named craftsmen used on it, which his majesty has, in his own presence, let erect and set up outside the castle in the stable yard, after which his majesty will have set up and built here at Koldinghus, one ship using his majesty woods here in the *len*.

The subsequent entries show that a total of 18 local shipwrights, joiners, carpenters and sawyers worked on the model for a total of 84 man-days. The model used 16 dozen timbers plus 64 alen (40m) of mast spars, 4000 iron spikes and nails, 90 iron screws, and 24 fathoms (60m approx.) of hemp cable. This was obviously a very large and sophisticated model that, judging from the materials used, must have been built as a complete miniature ship including all the framing, planking, masting and rigging, and not just a simple carved construction designed to show the basic form of the vessel. The model was then used to estimate the timber required for the actual ship and the shipwright and his sawyers were then instructed to fell the necessary timber from the local woods. The shipwright who built

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<sup>5</sup> Both plans and models were used to design ships, but the term *skabelon* was used to describe both, which can lead to some confusion. Balfour's contract for *Tre kroner* stated that the ship was to be built 'after the model he has humbly delivered to his majesty'. Rigsarkiv, Rentemesterregnskaber 1601/02, f. 602–5. The dockyard accounts show that the state shipwrights were issued with both paper for drawing ships plans and timber for constructing models. Rigsarkiv, Marinearkivet før 1655, 28. Bremerholms Tømmerregnskaber, 1601/02; Rigsarkiv, Rentemesterregnskaber 1618/19, p. 800; 1631/32, f. 204.

<sup>6</sup> A detailed analysis of these plans can be found in Martin Bellamy, 'David Balfour and Early Modern Danish Ship Design', *Mariners Mirror*, 92 (2006).

<sup>7</sup> Birgitte Dedenroth-Schou, *Koldinghus lens regnskaber 1610–11*, (København, 1984), 254–57.

the model was not employed to build the full sized ship, and instead a master shipwright was brought over from Copenhagen. However, this process was not a great success and the vessel capsized on launching. Whether this was a fault of the design, its interpretation by the shipwright, or the construction methods, is unknown, but it does highlight the difficulties involved in the whole design process.

The greatest difficulty appears to have occurred when models designed by Christian IV were issued to shipwrights. Apart from the case of the Kolding galley we can follow the consequences of this method in the construction of the large warship *Trefoldighed* in the early 1640s. This was to be built by private contractors and Christian IV stated that the ship was to be built 'after the model I have made of it'. However, when *Trefoldighed* was delivered it was found that the contractors had not followed his design and it had to be substantially rebuilt by the royal master shipwright.<sup>8</sup> Part of the problem was that the Dutch shipwright was expected, using his own rule-of-thumb methods, to replicate Christian IV's design, which was most likely produced as a plan using English methods.

Once Christian IV had approved a design a formal contract was issued to the shipwright. In common with many countries the royal master shipwrights operated both as state employees and as private contractors. They were often given contracts to supply ships that were to be built on Crown land, sometimes even within the royal dockyard itself. Depending on the contract they would have to supply their own workforce or materials, or else these were supplied by the state. In one case a royal shipwright established his own private yard as a means of supplying ships on contract. The reasoning behind this was that the state was able to spread the risk of shipbuilding and also delay payments until after a ship had been delivered, but at the same time still maintain absolute control over the shipwrights. The shipwrights also gained by receiving both a state wage and often a handsome contract price, even if payment was often delayed.

At first these contracts were vague and imprecise, stipulating simply the keel length and perhaps the arrangement of decks and masts.<sup>9</sup>

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<sup>8</sup> Letter to Corfitz Ulfeldt, listed as 1640? but more likely 1642, C. F. Bricka & J. A. Fredericia (eds), *Kong Christian den Fjerdes egenhændige Breve*, VII, 77.

<sup>9</sup> Details of contracts with Balfour, Rigsarkiv, Rentemesterregnskaber 1597/98, f. 444-6; and 1601/02, f. 602-5; *Kancelliets Brevbøger*, 20 December 1604.



Even for a large warship the contract could simply state that it was to be built in a similar way to another ship, with no specific dimensions or proportions given. This changed in 1613 when the private contractor Peter Michelsen was given his first contract. This was initially drawn up by Christian IV and was far more detailed than anything previously issued. It specified the keel length, breadth and depth of the vessel, the rakes of the stem and sternposts and the width of the transom. The arrangement of decks, cabins, masts, rudder and gun ports were also specified and the scantlings of the ships structure were all minutely detailed. In Christian IV's initial draft the rigging and sail layout were also specified, but these were omitted in the final contract.<sup>10</sup> There may have been a number of reasons behind the large amount of detail. As Michelsen was Dutch and did not use plans Christian IV may have felt that he needed to stipulate far more clearly the form and structure of the vessel in the actual contract. Michelsen was also an untried shipwright and this was also the first time that Christian IV had ordered a ship completely outside the state system.

Contracts issued to the Crown shipwrights also began to get much more detailed. To begin with they were not as sophisticated or as precise as the contracts with Michelsen, but they gradually increased in complexity. A major innovation was introduced in David Balfour's contract for *Hummeren* in 1623 when the draught of the completed ship was specified. This was a notoriously difficult measurement to predict and shows a remarkable degree of sophistication in ship design for this time.

Despite all the attention paid to designing and drawing up detailed contracts the completed ships nearly always varied from the specified dimensions. Most were built larger than the contract dimensions, although some were smaller. There were a number of reasons for these variations. Each shipwright would have his own idiosyncrasies and rules of thumb that were used in the construction. The suitability and availability of timber may also have played a part, but

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<sup>10</sup> Contract with Michelsen, 14 December 1613; an additional rough copy 20 December and the final contract of 28 December 1613, Rigsarkiv, TKIA, A12, Registrerede koncepter til Patenter II, 1611–14. The contract of 14 December is published in *egenhændige Breve*, I, 77–81; and the contracts of 14 and 28 December are published in English translation in P. Holck, 'Danish Shipbuilding in 1613', *Mariner's Mirror*, 13 (1932), 81–6.

it was most likely the anticipation of additional payments that encouraged shipwrights to build their ships larger.<sup>11</sup> Therefore, despite Christian IV's efforts to regulate design through the use of plans, models and contracts, he was not guaranteed to actually receive a ship that matched his expectations. However, apart from one or two instances, this does not seem to have been problematic, so long as he received a seaworthy ship of roughly the right size and proportion. On the whole the ships were accepted and the shipwrights paid their full contract price, even if the ship delivered did not exactly match the contract specifications.

### *Royal Master Shipwrights*

Christian IV's master shipwrights were almost exclusively English or Scottish. Frederik II had brought in English shipwrights, seemingly for their ability to build ships using the carvel method. When he ordered a ship from the English shipwright Hugo Beda in 1573 he explicitly stated that it should be carvel built. An English merchant complaining about the Sound tolls later stated that the king of Denmark 'has English shipwrights that build him goodly ships and galleys, after the English mould and fashion'.<sup>12</sup> Carvel building of the larger Danish warships had become standard by the mid sixteenth century, but Beda built most of his ships in Norway, where this technique was still novel.

During the 1590s relations with England were becoming increasingly strained due to numerous disputes over fishing and trading rights and the use of English shipwrights was somewhat controversial. A formal complaint was made that Denmark was 'intizing awaye her Majesty's servants and ship-wrightes to fashion your navie'.<sup>13</sup>

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<sup>11</sup> In contrast to England, where contractors were paid on a pound per ton basis, the Danish contracts stated the total contract price at the outset. Thus the shipwrights were not guaranteed any extra money although in some cases additional payments were made, such as the additional 300 Rdlr. granted to Christoffer Gjøl for the building of *Delmenhorst*. Letter from Gjøl, undated but listed under c. 1639–44, Rigsarkiv, Danske Kancelli, B160, Indlæg til registre og koncepter.

<sup>12</sup> Letter to Beda, 11 November 1573, *Norske Rigs-registranter*, II, 76; Thomas North, mariner, to Walsingham, 24 April 1582, *Calendar of State Papers (Foreign)*, 1581–82, 649.

<sup>13</sup> Edward A. Bond (ed.), *The Travels of Sir Jerome Horsey*, Hakluyt Society, 1st series, XX (1856), 243–4.

Relations with Scotland on the other hand were particularly strong after the marriage of James VI and Anne of Denmark, so Christian IV turned to Scotland for his shipwrights.

The first Scottish shipwright he employed was Robert Petersen who received a contract to build a large ship as a private contractor less than a month after Christian IV's coronation in 1596.<sup>14</sup> It was to be built on crown land at Haderslev in southern Jutland with Petersen employing his own workforce. The ship, the 44 gun *Viktor*, proved to be one of Christian IV's favourites and in 1604 Petersen was rewarded with a commission as master shipwright at the Bremerholm royal dockyard.<sup>15</sup> He then disappears from the record, having been eclipsed by another Scotsman, David Balfour.<sup>16</sup>

Balfour was born in St. Andrews in 1574 into a noble family connected with the Balfours of Burleigh who were courtiers to James VI. He travelled 'abroad' to learn the art of mathematics and somehow ended up in Denmark in 1597.<sup>17</sup> That year he was awarded a contract for a large 24-oar galley to be built beside Copenhagen Castle.<sup>18</sup> The ship was to be delivered complete in every way, for which Balfour received 200 Dlr. for his own and his carpenters' wages.<sup>19</sup> This ship must have been well received as later that same year he was awarded another contract to build a 30-oar galley in Blekinge.<sup>20</sup>

In 1599 Balfour got his first contract to build a large warship. Work, again using his own workforce, was begun at Bremerholm early in 1600.<sup>21</sup> This 54-gun ship, called *Argo*, was the largest warship

<sup>14</sup> Missive to Børge Trolle, 25 September 1596, Rigsarkiv, Danske kancelli, B57 Sjællandske Tegnelse, XIX, f. 5.

<sup>15</sup> It is possible that he was taken on as Hans Madsen's replacement. Petersen's Commission, 2 November 1604, Rigsarkiv, Danske Kancelli B54, Sjællandske Registre, 14, 1596–1604, f. 492–3. Madsen last appears in the timber accounts for 1602/03. Rigsarkiv, Marinearkivet for 1655, 28, Bremerholms Tømmerregnskaber.

<sup>16</sup> See Bellamy, 'David Balfour'.

<sup>17</sup> Details of Balfour's lineage and education come from his nobility patent, or 'birthbrief'. Rigsarkiv, Privatarkiver, Kronologisk Rk. 5/11/1629. Where exactly he went abroad is unknown but judging from his ship plans it was likely England or the Netherlands.

<sup>18</sup> It was fitted with an 'orloff' mast and a bowsprit so was probably technically a galeas. Missive to Børge Trolle, *Kancelliets Brevbøger*, 1 July 1597.

<sup>19</sup> Rigsarkiv, Rentemesterregnskaber, 1597/98, f. 444–6.

<sup>20</sup> Missive to Børge Trolle, *Kancelliets Brevbøger*, 4 December 1597; Rigsarkiv, Rentemesterregnskaber, 1597/98, f. 446.

<sup>21</sup> In total Balfour received 2300 Dlr. plus 517 Dlr. worth of victuals for this

to have been built for the Danish navy for many years and was immediately used by Christian IV as his new flagship. It was so well received that Balfour was immediately taken on as a royal master shipwright. He received no official commission of employment, but he is entered in the accounts as a *Hoftiener* (court servant) with wages of 400 Dlr.<sup>22</sup> Christian IV clearly regarded his Scottish shipwrights in very high esteem and in 1602 he wrote to James VI asking him to send some more ‘carpenters skilled in the art of shipbuilding’, although it appears that none were actually sent.<sup>23</sup>

Whilst receiving his state wages Balfour worked at Bremerholm where he built the small warship *Trost*, but this time using the dockyard workforce.<sup>24</sup> In 1602 he was awarded another contract to build a ship in Flensburg ‘at his own expense and with his own men’ that was to be ‘of the same size as his majesty’s new warship *Argo*, or slightly smaller’.<sup>25</sup> For this new ship Balfour was to receive 3000 Dlr., plus a half last each of rye and barley and a barrel of butter. The king was to supply all timber, iron and other materials for the ship’s construction as well as a pair of sawyers and 20 labourers. After receiving this contract Balfour ceased to be paid as a court servant.

The ship was begun in July 1602 and was nearing completion by January 1604.<sup>26</sup> However, far from being slightly smaller than *Argo*, the new ship, *Tre kroner*, was substantially larger.<sup>27</sup> But despite this

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contract. Payments to Balfour, 12 April, 12 June, 1 & 24 July, 30 August, 27 September, 31 October, & 8 November 1600, and 28 March, 10 April, 19 & 29 June, 4, 15 & 24 August 1601. Rigsarkiv, Rentemesterregnskaber, 1600/01, f. 441–3; and 1601/02, f. 602–5.

<sup>22</sup> In fact this seems to have been more of a retainer than a formal wage because payments began on 8 August 1601 when *Argo* was completed, and ended on 14 June 1602 when *Tre kroner* was under way. Rigsarkiv, Rentemesterregnskaber, 1601/02, f. 771–2; and 1602/03, f. 808–9.

<sup>23</sup> Letter to James VI, 9 March 1602, Rigsarkiv, TKUA Alm. del 1 No. 9: Latina 1600–15, p. 23.

<sup>24</sup> Timber issued to Balfour in May, November & December 1601, and March & June 1602 (Rigsarkiv, Marinearkivet for 1655, 28, Bremerholms Tømmerregnskaber, 1601/02 & 1602/03).

<sup>25</sup> Rigsarkiv, Rentemesterregnskaber, 1601/02, f. 604–5.

<sup>26</sup> The topworks were being made at Bremerholm in January 1604 (Rigsarkiv, Marinearkivet for 1655, 28, Bremerholms Tømmerregnskaber, 1603/04).

<sup>27</sup> *Tre kroner* was a three-decker of 2100 tonnes displacement, while *Argo* was a two-decker of 1200 tonnes displacement. Jan Glete suggests (personal communication) that it is unlikely that Balfour would have taken it upon himself to increase the size to such a great extent without the consent of Christian IV. This is possi-

the king seems to have been well satisfied with his new flagship and stated that he wanted to use Balfour again and would negotiate with him upon completion of his present work.<sup>28</sup> The *Tre kroner* was ready to sail to Copenhagen in August, and Balfour's next contract duly came in December 1604 for a ship to be built in Norway.<sup>29</sup> He was to be paid 1500 Dlr. and a last of barley, with which he was to hire his own men. All the timber, ironwork, blocks and rigging were to be supplied by the Akershus *lensmand*.

In 1607 Balfour was once again taken on as a royal master shipwright and again it appears that he received no formal commission of appointment, although the *rentekammer* accounts note that 'his majesty has graciously employed and engaged David Balfour in his majesty's service as a master shipwright'.<sup>30</sup> He almost immediately went to Ærø sund, near Haderselv, where he built the *Justitia* using timber from Holstein and a workforce apparently supplied by the state.<sup>31</sup>

In March 1610 Balfour was contracted to build another large ship, *Recompens*, at Itzehoe, in Holstein. This contract was to prove very problematic for Balfour.<sup>32</sup> When he first took on the work he was warned by Christian IV not to build the ship bigger than had been agreed and this instruction was reiterated several months later.<sup>33</sup> We know from a Swedish report on the fleet that *Recompens* was 'in all respects like *Argo*'. Knowing the last time that Balfour was requested to build a ship the same size as *Argo* he produced the much larger *Tre kroner*, it seems as though the king was determined to have his

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ble although the contract price for *Tre kroner* is only a little more than *Argo* and Balfour's request for additional payments for it were turned down. Missive to Balfour, *Kancelliets Brevbøger*, 29 January 1604.

<sup>28</sup> Missive to David Balfour, *Kancelliets Brevbøger*, 29 January 1604.

<sup>29</sup> Missive to Corfitz Ulfeldt, *Kancelliets Brevbøger*, 10 August 1604; Open letter to David Balfour, *Kancelliets Brevbøger*, 20 December 1604; Missives to Jørgen Friis, 21 & 24 December 1604, *Norske Rigs-registranter*, III, 94–5.

<sup>30</sup> His wages were again 400 Dlr. Rigsarkiv, Rentemesterregnskaber, 1607/8, f. 678.

<sup>31</sup> Ole Mortenson, *Renæssancens fartøjer: sejlads og søfart i Danmark 1550–1650*, (Rudkøbing, 1995), 204; Letter to *rigsråd*, 12 April 1633, *egenhændige Breve*, III, 102.

<sup>32</sup> I am indebted to Niels Probst for his help in identifying and interpreting some of the German documents associated with the construction of this vessel.

<sup>33</sup> Letter to Gert Rantzau, 10 March 1610, Rigsarkiv, TKIA A32, VII 1608–10, Registrerede koncepter til indlandische Registratur; Letter to Balfour, 1 June 1610, Rigsarkiv, TKIA A32.

instructions adhered to this time.<sup>34</sup> In early 1611 the construction work was advancing and Balfour wrote to the *Tyske kancelli* to request additional payments.<sup>35</sup> They decided, however, that no payment should be made before the ship had been inspected, no doubt to ensure that the ship was indeed being built to the agreed design. By March 1612 the ship was far enough advanced for a captain to be appointed and the man chosen was the young and inexperienced Claus Weinkauff.<sup>36</sup> This created problems for Balfour because the captain, being a military commander, took precedence over the shipwright. By May news of unrest between Balfour and Weinkauff had reached Copenhagen, where concern was expressed that the ship might be harmed by their disputes.<sup>37</sup> With the Kalmar War now in full swing Christian IV was urging the ship's speedy completion, but the apparently worsening dispute caused increasing concern. It was noted that Balfour's 'great maliciousness' towards the Captain was threatening the final completion of the ship.<sup>38</sup> Despite this dispute the ship was finally completed and ready to sail on 4 August. However, the fears surrounding its safety came alarmingly true as the ship foundered in the river on its way out to sea and was nearly lost.

Balfour's defence submission for the subsequent enquiry has survived and in it he implies that Weinkauff blamed Balfour for poor construction. Balfour in turn argued that he had built and prepared the ship properly and it was Weinkauff's poor seamanship and the fact that he had engaged women and musicians rather than pilots for the journey that had caused the accident.<sup>39</sup> The end result was that Weinkauff never received another command and Balfour ended up in prison.<sup>40</sup>

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<sup>34</sup> Swedish ship list of 1637, Rigsarkivet, Stockholm, Flottans Handlingar, Sjöexp. Vol. I-II, læg 24. (M 1848).

<sup>35</sup> Letter to Tobia Lautterbach, Secretary of the Tyske kancelli, 25 February 1611, with margin notes (9 March 1611), and a draught reply. Rigsarkiv, TKIA A145, Akter vedr. skibsbyggerne David Balfour og Peter Michelsen.

<sup>36</sup> Muster book of Claus Weinkof 16 March–1 Sept 1612, Rigsarkiv, TKIA A145; H.D. Lind, *Kong Kristian den Fjerde og hans Mænd paa Bremerholm*, (København, 1889), 193.

<sup>37</sup> Letter to Baltzer von Ahlefeldt, 28 May 1612, Rigsarkiv, TKUA, Alm. del 124, f. 173a.

<sup>38</sup> Letters to Baltzer von Ahlefeldt 4, 12, 16 & 27 July 1612; and David Balfour & Claus Weinkauff, 4 July 1612, Rigsarkiv, TKUA, Alm. del 124, ff. 195a, 196, 205a, 209a & 211b.

<sup>39</sup> Letter to Christian IV, undated, Rigsarkiv, TKIA A145.

<sup>40</sup> Lind, *Kong Kristian og hans Mænd*, 193.

Balfour remained imprisoned at Dragsholm Castle for over three years and was only released after a heart-rending plea from James VI and I in which he stated that 'not only has he been almost killed by the sadness and squalor of the long imprisonment, but also his wife and infant children have been reduced to almost extreme poverty'. It seems that Balfour's kinship with the Balfours of Burleigh had proved invaluable as they had petitioned James VI and I claiming he had been falsely accused.<sup>41</sup> He was finally released in June 1616 and was ordered to return immediately to Copenhagen where he was again taken into Christian IV's employment.<sup>42</sup>

Whilst Balfour was in prison another noble Scottish shipwright, Daniel Sinclair, appeared in Denmark. Nothing is known of his early life, but he seems to have operated as a private shipbuilding contractor in Denmark.<sup>43</sup> In 1614 he was admitted to the brotherhood of the most distinguished guild of Copenhagen, the *Danske kompagni* (Danish Company), so must have been resident in Denmark for some time to have achieved this social rank.<sup>44</sup>

In 1617 both men were given commissions as master shipwrights with wages of 400 Rdlr.<sup>45</sup> Both worked at Bremerholm and it seems as though Balfour initially served a probationary period. The dockyard accounts show that he was issued with material on a regular basis, but only in small quantities suggesting that he was involved in repair work or the construction of small vessels.<sup>46</sup> In 1622 he was

<sup>41</sup> Letter from James I to Christian IV, 30 September 1615, (Ronald L. Meldrum (ed.), *The Letters of King James I to King Christian IV 1603–1625*, (Hassocks, 1976)).

<sup>42</sup> Missive to Olluf Rossensparre, 13 June 1616, O. Nielsen (ed.), *Københavns diplomatarium*, (København, 1874), V, 25.

<sup>43</sup> The English East India Company considered contracting him to build a 500 ton ship Denmark in 1614. Court Minutes of the East India Co. 16 August 1614, Court Minute Book Vol. III, British Library, BL OIOC B/5, 196–7.

<sup>44</sup> Københavns Stadsarkiv, Privataarkiver I, Det danske kompagnis Broderbog, I, p.64; Murdoch suggests that Sinclair was a second generation Scot, born in Norway, and Monro referred to him as 'a worthy gentleman begotten of Scots Ancestors'. Steve Murdoch, *Britain, Denmark-Norway and the House of Stuart, 1603–1660* (East Linton, 2001), 194; Robert Monro, *Monro His Expedition with the worthy Scots Regiment (called Mac-Keyes Regiment) levied in August 1626*, (London, 1637), I, 42.

<sup>45</sup> Balfour and Sinclair's commissions, 2 July 1617, Rigsarkiv, Danske Kancelli, B54, Sjællands Registre 1613–19, f. 267–8.

<sup>46</sup> Rigsarkiv, Marinearkivet for 1655, 30. Store Smedjes Regnskaber, 21 & 29 February and 6 March 1620, 27 April and 6 September 1621.

awarded a contract to build a ship, but this was only a small *jagt* for which he received just 150 Dlr.<sup>47</sup>

Sinclair at first also only built small vessels,<sup>48</sup> but he was given a major contract in 1620 to build a ship in Blekinge 'at his own cost and with his own men' for the sum of 14,300 Kdlr.<sup>49</sup> The ship, the 36 gun *Røde Love*, was completed in 1622, but due to allegations made against him and a subsequent enquiry, he did not receive his final payment until 1625.<sup>50</sup>

In 1623 Balfour received his first major contract since the *Recompens* affair. This was for a small shallow-draught 24-gun ship, called *Hummeren*, which was to be built at Bremerholm using his own workforce. All materials were supplied by the dockyard and the dockyard's personnel were to be used to launch the ship, but all other costs were to be met by Balfour. The contract stated that the ship was to be completed by August 1624 and that Balfour was to be paid 3500 Rdlr. in four instalments.<sup>51</sup> Whilst building *Hummeren* Balfour also constructed another smaller ship called *Postillionen*, for which he did not receive a contract, indicating that it was built in his position as royal master shipwright and using the dockyard's own labour. With these two ships Balfour seems to have redeemed his reputation. Their designs proved extremely successful and many copies were made of them in subsequent years.<sup>52</sup> Already in January 1625 Balfour was awarded a contract to build two more ships identical to *Postillionen*, which were to be built at Bremerholm using his own workforce. For each ship he was to receive 9000 Dlr.<sup>53</sup>

With this new-found trust Balfour was able to set up his own private shipyard in Christianshavn. The site has recently been exca-

<sup>47</sup> Rigsarkiv, Rentemesterregnskaber 1622/23, 78, f. 195.

<sup>48</sup> He built a small transport ship in 1619. Missive to Ebbe Munk, *Kancelliets Brevbøger*, 22 January 1619; Missives to Hans Staffensen, Axel Urne & Mogens Pax, *Kancelliets Brevbøger*, 13 March 1619.

<sup>49</sup> Missive to Tage Thott, *Kancelliets Brevbøger*, 14 February 1620.

<sup>50</sup> He later mentioned that he was 'frequently denounced' during the building of this ship. Rigsarkiv, Danske kancelli, B160, 29/1/1626. It was probably *Røde Love* Sinclair was demanding payment for in an undated letter to the king. Rigsarkiv, Danske Kancelli, B160, (1616–36); Missive to Hendrik Vind & Jens Munk, *Kancelliets Brevbøger*, 31 October 1624; Missive to *rentemestrene*, *Kancelliets Brevbøger*, 23 February 1625; Rigsarkiv, Rentemesterregnskaber, 1624/25, f.96;

<sup>51</sup> Contract with David Balfour, *Kancelliets Brevbøger*, 2 October 1623. A draft of this contract can be found in Rigsarkiv, Danske kancelli, B164, IX, pk. 06, læg 17.

<sup>52</sup> A discussion of these ships can be found in Bellamy, 'David Balfour'.

<sup>53</sup> Open letter, *Kancelliets Brevbøger*, 25 January 1625.



vated to reveal two slipways and a careening dock created by sinking two small ships.<sup>54</sup> Nothing is known of the actual organisation of the yard, but we do know that Balfour employed Dutch carpenters.<sup>55</sup> Some men from Bremerholm were also used from time to time, such as the apprentices that were there in 1625, but any wages or victuals given to them by the state were deducted from Balfour's contract.<sup>56</sup>

The first contract to build a ship for the navy at this new shipyard came in 1625, for a small barge called *Skieldtusen*. Two additional copies of *Postillionen* were then built there in 1626, called *Haren* and *Mynden*.<sup>57</sup> That year Balfour was given a contract to build his first large warship since *Recompens*. The contract no longer exists, but the king ordered that as payment for the ship he should receive a keel and other large ship's timbers.<sup>58</sup> This shows that, in contrast to his contracts built at Bremerholm, Balfour was to supply the timber as well as the manpower for contracts placed at his own shipyard. The new ship, *Oldenborg*, was completed by the beginning of 1628 and made a favourable impression on Christian IV who described it as 'one of my best warships'.<sup>59</sup>

Balfour's reputation was now well and truly re-established and in 1628 he was awarded his biggest single contract, worth 14,000 Rdlr., to supply two slightly larger copies of *Hummeren*, complete in every way apart from the figurehead and stern carvings.<sup>60</sup> After delays caused by problems with his wood supplier, the first of the ships, *Tre Løver*, was completed by 1630 and the second, *To Løver*, the following year.<sup>61</sup>

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<sup>54</sup> Henrik B. Frederickson, 'Værft og anlæg ved Grønnegårds Havn', *Middelalder-arkæologisk Nyhedsbrev*, October 1996. I am indebted to the author for providing an advance copy of this article.

<sup>55</sup> Missive to Sten Villumsen and Mogens Kaas, *Kancelliets Brevbøger*, 7 November 1625.

<sup>56</sup> 190 Rdlr. worth of victuals supplied to the apprentices from Bremerholm were deducted from Balfour's contract. Rigsarkiv, Rentemesterregnskaber 1/5/1625-31/12/1625, f. 53.

<sup>57</sup> Rigsarkiv, Marinearkivet for 1655, 18. Bremerholms materialregnskaber, Udgift 1626/27.

<sup>58</sup> Missive to Stalder Kaas, *Kancelliets Brevbøger*, 15 April 1626. Further timbers were delivered to Balfour from Scania. Missive to Christopher Urne, *Kancelliets Brevbøger*, 2 May 1626.

<sup>59</sup> Letter to Peder Vibe, 28 August 1642, *egenhændige Breve*, V, 246.

<sup>60</sup> Accord with David Balfour, *Kancelliets Brevbøger*, 26 November 1628.

<sup>61</sup> Missive to Erik Rosenkrantz, *Kancelliets Brevbøger*, 14 February 1628.

An indication of the high social and intellectual esteem in which Balfour was now held is shown by an effusive dedication to him in one of the many volumes written by the scientist, theologian, historian and Court Astronomer Niels Heldvad. He stated that Balfour was 'his majesty's greatest warship builder' and that he had 'a particular honour and fame' on account of his art and ability.<sup>62</sup> Balfour was now living in one of the most salubrious parts of Copenhagen and counted many noblemen and *rigsråd* members among his neighbours. His social status was further reinforced in 1629 with the receipt of an official nobility patent from Charles I.<sup>63</sup>

However, despite this high standing Balfour was soon facing serious commercial difficulties. Despite having designed the new class of *defensionskibe* in 1630 (Plate 15) he did not receive any contracts to build any.<sup>64</sup> Nor did he receive any further naval contracts at all. This was probably because he had become embroiled in a lengthy dispute with the town council over the extent and ownership of his shipyard.<sup>65</sup> Despite this he still maintained his role as master shipwright at Bremerholm until his death in 1634.<sup>66</sup> He also retained his reputation and social standing and his funeral eulogy was given by Copenhagen University's professor of metaphysics.<sup>67</sup> His contribution to the Danish navy was enormous. He built at least 25 vessels of all sizes and his designs were used as the basis for building many more by other shipwrights.

Daniel Sinclair, meanwhile, had been building a number of ships in Lolland. He had originally gone there in 1623 to organise the

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<sup>62</sup> Niels Heldvad (Nicolao Heldwadero), *Onomat-etymologicon de Originibus nominum* . . ., (København, 1630).

<sup>63</sup> This patent may have been connected with an application for elevation to the Danish nobility. According to Danish common law a foreigner becomes a naturalised Danish citizen upon marriage to someone of the same standing. Balfour married three times, but none of his wives were of the nobility. Thomas Riis, *Should Auld Acquaintance be forgot: Scottish-Danish relations c. 1450–1707*, (Odense, 1986), I, 106.

<sup>64</sup> Ordinance, 27 March 1630, *Norske rigsregistranter*, VI, 213–5; Rigsarkiv, Soetatens kort- og tegningssamling, Des. E.7. He did assist the Trondheim *lensmand* to complete one in 1631 and he also built one on spec at Christianshavn in 1632.

<sup>65</sup> Missive to Christian Friis & Frans Rantzau, 25 February 1632, *Københavns diplomatarium*, VI, 127.

<sup>66</sup> Rigsarkiv, Rentekammer, Udgift Conto I.a., Klædekammer regnskaber, 1633/34, f. 28.

<sup>67</sup> He was given 4 Rdlr. for this service. 'Udtog af D. Jacob Matthisens Tegnebog', *Danske Magazin*, 1 Bd. (1745), 218–9.

fellings of timber to be sent to Bremerholm, but Christian IV decided to use the timber at source using an old dockyard on the small island of Slotø in Nakskov Fjord.<sup>68</sup> Whilst the shipyard was under construction preparations were also made for the building of the ship. Sinclair had to draw up an estimate of the timber required, with details of the length and breadth of all timbers above and below the gun ports, and for the outer planking and decks, as well as the type and number of spikes required for each area of the hull.<sup>69</sup> The accounts show that this yard operated as a wholly state concern, with all materials and labour supplied by the state. The ship, *Store Sophia*, was the largest built for the navy since *Tre kroner* and was completed by 1627.

During the building of *Store Sophia* Sinclair was accused of embezzlement.<sup>70</sup> He had felled 300 oaks, which were then taken to a public harbour for shipment to Copenhagen. The local burgomaster was sold the tops and branches as firewood, but felt he received a poor bargain and accused Sinclair of selling some of this wood for his own profit. Sinclair in turn claimed that because the wood was taken to a public harbour much of the timber was cut up and stolen by local seamen and farmers. He could account for every one of the trees he had felled and gave a touching tale about how one day he was travelling through the Crown's woods in bad weather and came across a house, the good people of which lit him a fire to warm himself by. In return he had the factor reimburse them with the top of one of the felled crown trees and this, claimed Sinclair, was the one and only treetop that he had used.<sup>71</sup>

Nothing further is heard of the allegations and shortly after the *Store Sophia* was completed Sinclair was given a further contract to build two more ships, copies of Balfour's *Hummeren*, at the Slotø yard.<sup>72</sup> However, unlike *Store Sophia*, these two ships were to be built using Sinclair's own labour force and he was to pay for all materials used, except for the ironwork and the masts which the state would

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<sup>68</sup> Missives to Laurits Grubbe and Jørgen Grubbe, *Kancelliets Brevbøger*, 19 November 1623.

<sup>69</sup> Missive to Axel Urne, *Kancelliets Brevbøger*, 27 May 1624.

<sup>70</sup> Missive to Daniel Sinclair, *Kancelliets Brevbøger*, 14 November 1625.

<sup>71</sup> Sinclair's defence submission. Rigsarkiv, Danske kancelli, B160, 29/1/1626.

<sup>72</sup> Accord with Daniel Sinclair, *Kancelliets Brevbøger*, 7 February 1628.

supply. For this work Sinclair was to receive 14,000 Rdlr., but with the value of any timber supplied from Lolland deducted from this sum. In effect the shipyard had become a private concern and in contrast to the full records for the building of *Store Sophia*, the only state records that exist for *Kronet fisk* and *Lammet* are the accounts of materials supplied to the yard from Bremerholm.

In 1631 Sinclair received a contract to supply another large warship from the Slotø yard.<sup>73</sup> Again it was to be built by Sinclair operating as a private contractor with the state supplying just the ironwork, masts and stern decorations. All other materials and labour costs were to be met by Sinclair. The contract was worth 9,500 Rdlr., but again the value of any timber supplied from Lolland was to be deducted. Work came to a standstill almost immediately, however, as Sinclair was ordered to Norway to build another ship. The Slotø ship, *Norske Løve*, was not finally launched until 1633 and was delivered in 1634.<sup>74</sup>

The supply of timber now seems to have been exhausted. No further ships were built at Slotø and by early 1635 Sinclair had returned to Bremerholm.<sup>75</sup> He seems to have taken over Balfour's yard at Christianshavn, but any involvement was short-lived as he was ordered to have nothing to do with it until the dispute over boundaries had been resolved.<sup>76</sup> In any case he would have had little time to carry out any work there as at the end of 1635 he was again out inspecting timber and at the beginning of 1636 he was building a *jagt* in Kolding.<sup>77</sup> This appears to be last ship that Sinclair built as he died in October later that year.

Despite Balfour and Sinclair teaching a number of apprentices in the art of shipwrightry there were not actually many other master shipwrights in state service. During the 1620s and early 1630s Balfour and Sinclair were really the only shipwrights of any consequence, so when they died it left a huge vacuum in Danish naval shipbuilding.

<sup>73</sup> Contract with Daniel Sinclair, *Kancelliets Brevbøger*, 13 March 1631.

<sup>74</sup> Missive to Jost Frederik Pappenheim, *Kancelliets Brevbøger*, 12 April 1633; Rigsarkiv, Rentekammer, Udgift Conto I.d., Regnskaber for skibsbyggeriet paa Slotsoen ved Nakskov, C.4. Material Regnskab, Norske Løve 1/3/1631—1/11/1634.

<sup>75</sup> Letter to Claus Daa, 22 January 1635, *egenhændige Breve*, III, 327.

<sup>76</sup> Missive to Erik Ottesen, *Kancelliets Brevbøger*, 27 August 1635.

<sup>77</sup> Instructions to Daniel Sinclair, *Kancelliets Brevbøger*, 22 September 1635; Missive to Ernst Normand, *Kancelliets Brevbøger*, 13 March 1636

*Royal Master Shipwrights after the Scots*

This vacuum was initially filled by two Danes who had been promoted from the junior ranks. Svend Andersen started his career as a ship carpenter and was working at Bremerholm from at least 1619. By 1621 he had been promoted to foreman ship carpenter.<sup>78</sup> He gained further promotion when he went to Slotø to assist Sinclair in the building of *Store Sophia*, when he was referred to as an *underskibsbygmester* (junior master shipwright). Despite this rise through the ranks Andersen was far from being a model employee and spent nearly two years as a prisoner at the dockyard.<sup>79</sup> This did not prevent him from receiving a commission as master shipwright in 1631.<sup>80</sup> But with wages at only half those of Balfour and Sinclair he was clearly not as well regarded and spent most of his time building smaller warships in Norway.<sup>81</sup> Johan Brandt was similarly promoted from the ranks of the foremen ship carpenters and by 1636 had been entrusted with the construction of a couple of small vessels at Bremerholm.<sup>82</sup> In August that year he then received a commission as a master shipwright on the same terms as Andersen.<sup>83</sup>

In 1637, after the deaths of Balfour and Sinclair, both Andersen and Brandt were given renewed commissions as master shipwrights, with their wages increased to the same as that of the two Scots.<sup>84</sup>

<sup>78</sup> List of carpenters working at Bremerholm 14–21 November 1619. Rigsarkiv, Danske kancelli, B164, Diverse, IX, læg 18, pk. 07. His wages were 50½ Dlr. Rigsarkivet, Rentekammer, Udgift Conto I.a., Klædekammer regnskaber, 1621/22, f. 39.

<sup>79</sup> The reasons are unknown but he was first imprisoned in April 1626 and not released until November 1627. Rigsarkiv, Rentekammer Udgift Conto I.d., Regnskaber for skibsbyggeriet paa Slotøen ved Nakskov, B.3. Muster books of personnel; Missive to Stalder Kaas, *Kancelliets Brevbøger*, 15 August 1626; Open Letter, *Kancelliets Brevbøger*, 24 November 1627.

<sup>80</sup> Andersen's commission, 25 January 1631, Rigsarkiv, Danske Kancelli B54, Sjællandske Registre 18, f. 549–50.

<sup>81</sup> The ships he built were *Delmenhorst* (1633), *Sorte Rytter* (1634) and *Snaresvend*? (1637). Letter to Palle Rosenkrands, 19 June 1633, *Norske Rigs-registranter*, VI, 552; Contract with Cristopher Gjoe, 25 April 1633, *Norske Rigs-registranter*, VI, 535–6; Letter to Steen Villumsen and Sigvard Gabrielsen, 4 October 1634, *Norske Rigs-registranter*, VI, 696.

<sup>82</sup> They were the 6 gun *Jomfru Svenden* and the 6 gun galley *Linden*. Rigsarkiv, Marinearkivet for 1655, 24. Materialskriver regnskaber 1635/36; Rigsarkiv, Rentekammer, Udgift Conto I.a., Klædekammer regnskaber, 1636/37, f. 51.

<sup>83</sup> Rigsarkiv, Danske Kancelli, B54, Sjællandske Registre 1632–37, f. 430–1.

<sup>84</sup> Svend Andersen's Commission 22 May 1637, Rigsarkiv, Danske Kancelli, B54,

They were clearly seen as their natural successors, but neither had much of a chance to shine. Andersen spent most of his time at Bremerholm, but by this time few warships were being built there and he is only mentioned in connection with small ships and boats.<sup>85</sup> Brandt moved to Norway where he built three warships.<sup>86</sup> He returned to Bremerholm around 1643 but appears not to have built any further ships.<sup>87</sup>

Although Andersen and Brandt were at first seen as replacements for Balfour and Sinclair they simply did not have the skill or reputation that Christian IV required and in 1641 he wrote to Charles I of England requesting 'from the land that gives birth to an abundance of powerful shipwrights' one such expert craftsman 'to alleviate the penury of our country'.<sup>88</sup> Although English shipwrights were prohibited from seeking employment abroad,<sup>89</sup> Charles I wrote back to his uncle saying that he would gladly send an experienced royal shipwright.<sup>90</sup> Christian IV's family connections obviously paid dividends as the shipwright, James Robbins, began work in Denmark on 30 July.<sup>91</sup> Robbins had started his career as a seagoing ship carpenter and by 1635 he had progressed to being a royal purveyor of timber in Hampshire.<sup>92</sup> Any prospects of further advancement were

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Sjællandske Registre 1632–37, f. 504–5; Johan Brandt's Commission 26 May 1637, Rigsarkiv, Danske Kancelli, B54, Sjællandske Registre 1632–37, f. 504–5.

<sup>85</sup> Letters to Corfitz Ulfeldt, 17 September 1639, 22 November 1640, 23 January 1641, & 8 February 1641, 4 February 1643 & 4 January 1648, *egenhændige Breve*, IV, 260, 421, V, 11, 17, 294–5, & VIII, 406–7.

<sup>86</sup> The ships were *Tre Løver* (1640), *Fenix?* (1642) and *Stormarn* (1644). Contracts with Christoffer Gjøe, 22 August 1638 & 8 June 1639, *Norske Rigs-registranter*, VII, 427–8 & 579–80.

<sup>87</sup> Rigsarkiv, Marinearkivet for 1655, 26. Materialskriver regnskaber, 1643/44; 1644/45.

<sup>88</sup> Letter to Charles I, 13 April 1641. Rigsarkiv, TKUA Alm. Del. I, Latina 1632–51, No. 11, pp. 182–3.

<sup>89</sup> A Proclamation for better furnishing the Navy and Shipping of the Realme with able and skilfull Mariners, 6 August 1622; A Proclamation requiring all Seafaring Men, Ship Wrights, Ship-Carpenters, &c., being the king's Subjects, and in the Service of any Foreign Prince, to return home within a time limited, 5 May 1634. *Rymer's Foedera*, 17, 399 & 19, 549–50.

<sup>90</sup> Letter to Christian IV, 5 August 1641, Rigsarkiv, TKUA, Speciel del, England, I.A. 3.

<sup>91</sup> His commission of 12 March 1642 was made effective from 30 July 1641. Rigsarkiv, Danske Kancelli, B54, Sjællandske Registre, 1641–48, f. 109.

<sup>92</sup> Further details of Robbins can be found in Martin Bellamy, 'English Master Shipwrights to the Danish Crown', *Mariner's Mirror*, 84 (1998), 207–9.

blocked by the virtual stranglehold over naval shipbuilding by the Thames master shipwrights. A move to Denmark was therefore an attractive proposition. He was also a logical choice for Charles I who did not want to lose one of his more experienced shipwrights. There must be some doubt, though, about whether Robbins was quite as skilled as Charles I implied.

Robbins undoubtedly made the correct decision. When he received his commission from Christian IV on 12 March 1642 he was awarded an extremely generous wage of 960 Rdlr. This sum is truly remarkable for someone who was essentially an untried and untested craftsman. It was more than double what any previous shipwright had earned and only six other government employees received a higher wage.<sup>93</sup> Apart from the wages, Robbins' commission was essentially the same as Andersen and Brandt's commissions of 1637.<sup>94</sup> In it he agreed to provide diligent and true service as a shipwright, wherever and whenever he was commanded, and to teach a certain number of apprentices every year. One of his first tasks was the rebuilding of *Trefoldighed*. Christian IV ordered that 'the English shipwright shall tear off the top-timbers as they now stand, and make the ship according to the model as I ordered'.<sup>95</sup> He was later given further orders to alter the shape of the fore- and after-castles, and to enlarge the gun ports.<sup>96</sup>

Once this work was completed Robbins probably assisted with the general work at Bremerholm, including the mobilisation of the fleet in 1644, which required further alterations to *Trefoldighed*.<sup>97</sup> Then in 1645 he was ordered to Norway to construct a ship 'of such a size, strength and design that it can pass for a true royal prestige warship'.<sup>98</sup> Robbins' son, James Robbins Jr., worked as his assistant on this ship,<sup>99</sup> and once it was completed he was rewarded with a commission

<sup>93</sup> Rigsarkiv, Rentemesterregnskaber, 1641/42.

<sup>94</sup> Rigsarkiv, Danske Kancelli, B54, Sjællandske Registre, 1641–48, f. 109.

<sup>95</sup> Letter to Corfitz Ulfeldt, 8 June 1642, *egenhændige Breve*, VIII, 183–5.

<sup>96</sup> Letter to Corfitz Ulfeldt?, 18 July 1642, *egenhændige Breve*, VIII, 201.

<sup>97</sup> He received regular payments from the *rentekammer* from his engagement until April 1645. Rigsarkiv, Rentemesterregnskaber, 1642/43; 1643/44; 1644/45; Letters to Corfitz Ulfeldt, 7 January 1644, *egenhændige Breve*, V, 432–4.

<sup>98</sup> Letter December 1645, Chr. Lange (ed.), 'Stadtholder Hannibal Sehesteds Copiebog for Aaret 1645', *Samlinger til det Norske Folks Sprog og Historie*, V (1838), 449.

<sup>99</sup> He had also worked alongside his father at Bremerholm before 1645. Open letter, 22 March 1652, *Norske Rigs-registranter*, IX, 406.

as an *underskibbygger* (junior shipwright), with an annual wage of 300 Rdlr.<sup>100</sup> After this ship, *Hannibal*, was completed in 1647 Robbins and his son were ordered to build a further two large ships at Christiania. The *Sofie Amalie* and *Prins Christian* were among the biggest ships built for Christian IV's navy but they were not completed until 1651, well after the king's death. The two shipwrights remained in Danish service for many years thereafter.

### *Private Contractors*

The first private contractor used by Christian IV, as previously mentioned, was Peter Michelsen. He first appears in December 1613, just after Balfour had been imprisoned for the *Recompens* affair. It seems likely therefore that Michelsen was used initially as a replacement for Balfour, especially as he also took on the Itzehøe yard used by the Scotsman. Despite the pains taken by Christian IV in drafting the contract, when he went to inspect the ship just a few months later he found that it was being built slightly larger than stipulated.<sup>101</sup> Despite this, the ship *Fides* turned out to be a very successful design and many copies were subsequently made. Michelsen had clearly shown his worth as a shipwright and in the following five years he received a spate of new orders, each with an equally detailed contract.<sup>102</sup> His *Svanen* was very well received and in 1624 Christian IV was negotiating with Michelsen to build a further six to the same design. However, Michelsen was experiencing difficulties in getting paid and would commit to building just one.<sup>103</sup>

<sup>100</sup> James Robbins Jr.'s commission, 9 June 1647, Rigsarkiv, Danske Kancelli, B54, Sjællanske Registre 1641–48, f. 670.

<sup>101</sup> Diary entry 25 February 1614, Suhm (ed.), 'Kong Christian IVdes Skrivkalander for Aarene 1614 og 16', *Nye Samlinger*, 2 Bd., 91–114.

<sup>102</sup> Contract dated 27 November 1615, Rigsarkiv, TKIA, A12, III, 1615–30; Contract dated 13 December 1616, Rigsarkiv, TKIA, A145, Akter vedr. skibsbyggerne David Balfour og Peter Michelsen; and a copy of the same date wrongly filed in Rigsarkiv, TKIA, A12, II, 1611–14; Contract dated 13 December 1616, Rigsarkiv, TKIA, A145; Contract dated 11 November 1617, Rigsarkiv, TKIA, A145; and a sketch contract in Rigsarkiv, Danske Kancelli, B164, Diverse, IX, læg 17, Pk. 06.; an additional copy of this contract was issued on 18 September 1618, Rigsarkiv, TKIA, A12, III, 1615–30.

<sup>103</sup> The contract for *Svanen* does not exist, but was probably issued in 1622. Letter dated 22 December 1624, Leo Tandrup, *Svensk agent ved Sundet*, (Århus, 1971), 525–6; Contract dated 24 December 1624, Rigsarkiv, TKIA, A145.



At the start of the *Kejserkrig* Michelsen played an important role in providing supplies for the ships based at Glückstadt but his yard fell into enemy hands when Wallenstein invaded Jutland in 1627.<sup>104</sup> Not long after the Peace of Lübeck, however, Michelsen received another contract for a large warship, *Tre kroner*, which was completed in 1634.<sup>105</sup> This was probably the last ship supplied by him and by 1637 he was dead.<sup>106</sup> In all Michelsen is known to have built one large warship, five medium sized ones and several smaller warships and boats.<sup>107</sup> His ships were characterised by their shallow draught and noted for their seaworthiness.

The firm of Berns and Marselis was established when the young entrepreneur Albert Baltser Berns set up in partnership with the older well-established merchant Gabriel Marselis, a Dutchman operating from Hamburg.<sup>108</sup> Berns' family was part of the elite Dutch merchant community in Copenhagen and had become a royal supplier there in 1625. With Berns' royal connections and Marselis' capital they made ideal partners, and they first joined forces to supply Glückstadt with victuals, weapons and ammunition during the *Kejserkrig*. In 1638 they established a shipyard in Neustadt to exploit the extensive timber supplies in the area and within a year Christian IV had issued them their first contract to supply a warship. Over the next ten years they received many more contracts and in order to monitor this work one of the navy's senior ship carpenters was sent to oversee the work.<sup>109</sup>

During the Torstensson War the yard was captured by the Swedes who seized one ship nearing completion and then destroyed the yard.<sup>110</sup> Immediately after the war the yard was rebuilt and a further

<sup>104</sup> Missives to Jørgen Ulfeldt, *Kancelliets Brevbøger*, 31 October 1625, 29 April 1626, 24 & 27 May 1626.

<sup>105</sup> Letters from Michelsen 26 June 1629, and 2 December 1629, Rigsarkiv, TKIA, A145; Rigsarkiv, Marinearkivet for 1655, 21 Bremerholmens Materialskrivers Regnskab, 1632 (Indtægt).

<sup>106</sup> Letter to Henrik Müller, 14 December 1637, *egenhændige Breve*, IV, 168.

<sup>107</sup> The larger ships were *Fides* (1613–15), *Neldebladet* (1616–18), *Sorte Rytter* (1617–19), *Svanen* (1622–24), *Lindormen* (1624–26) and *Tre kroner* (1629–34).

<sup>108</sup> John T. Lauridsen, 'Skibsbyggeri for den danske krone i Neustadt i 1640'erne', *Handels- og Søfartsmuseets Årbog*, (1982), 70–83; John T. Lauridsen, *Marselis konsortiet: en studie over forholdet mellem handelskapital og kongemagt*, (Århus, 1987).

<sup>109</sup> C. F. Bricka (ed.), 'Kong Christian IV's kalenderoptegnelser fra Aarene 1617, 1629 og 1639', *Danske Samlinger*, V (1869–70), 49–88.

<sup>110</sup> Another ship that only just been started was abandoned.

two large ships were built there for Christian IV. By the time that *Frederik* was delivered in 1649 increasing concern was being expressed over the cost of the ships being ordered from Berns and Marselis. This alerted Frederik III to Corfitz Ulfeldt's corruption and led to the establishment of the commission to investigate his financial affairs. With Berns and Marselis heavily implicated in this corruption no further contracts were placed with the Neustadt shipyard, and it was sold off shortly afterwards.

It was not just financial concerns which hastened the abandonment of Berns and Marselis as shipbuilding contractors, however, as the quality of their ships was not all it could have been. Christian IV was extremely angry when *Trefoldighed* was delivered in 1642, complaining that 'I can now see with my own eyes that the model has not been followed in any way'.<sup>111</sup> Even after it had been rebuilt by Robbins it was noted as being a poor sailer.<sup>112</sup> The main problem seems to have been that Berns and Marselis employed Dutch shipwrights, whose methods did not particularly suit the construction of large vessels. Christian IV was more used to the English style ships of Balfour and Sinclair, and there would therefore have been difficulties in transferring the design criteria from one method of construction to the other.

In order to compare the relative merits of the two methods two large ships were ordered in 1647, one, *Frederik*, from Berns and Marselis, the other, *Sofie Amalie*, from James Robbins. Like *Trefoldighed*, though, *Frederik* was found to sail poorly. When a report on the Danish fleet was made in 1653 it was described as unserviceable and noted that the lower tier of cannon could not be used.<sup>113</sup> The smaller ships built by Berns and Marselis, though, appear to have been much better, and much more suited to the Dutch style of building. Although the yard was important in terms of financing ships for Christian IV, its importance should not be overestimated.<sup>114</sup> They are known to have received contracts for only eight warships, two of which never

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<sup>111</sup> Letter to Corfitz Ulfeldt, listed as 1640? but more likely 1642, *egenhændige Breve*, VII, 77.

<sup>112</sup> Christian Bruun, *Curt Sivertsen Adelaer*, (København, 1871), 420.

<sup>113</sup> Bruun, *Curt Sivertsen Adelaer*, 423.

<sup>114</sup> Lauridsen states that naval shipbuilding in the 1640s was predominantly in their hands, but both Johan Brandt and James Robbins also built large and medium sized warships in the 1640s. Lauridsen, *Marselis konsortiet*, 49.

entered the Danish navy and two of which, *Trefoldighed* and *Frederik*, were poorly constructed and sailed badly.

The use of private contractors was certainly not a new departure for the Danish navy but Christian IV used them much more extensively than any previous monarch.<sup>115</sup> Undoubtedly the main reason for this was because they were built in Holstein, using timber from the ducal estates, where the *rigsråd* had no influence over their construction. They were paid for principally from the king's own purse, and he could argue that they had cost the state not one daler.<sup>116</sup> Although much of the capital costs of ships built by the royal shipwrights were also met by Christian IV, the fact that they were employed by the state meant that the *rigsråd* did have some say in the way they were used. By going outside the state system altogether and using private contractors Christian IV was able to supplement the ships built by the royal shipwrights without any political interference.

The private contractors built ships predominantly in the Dutch style. No firm conclusions, however, can be made as to whether it was a deliberate policy to build in this style. The range of duties performed by the navy certainly called for a mix of different types of ship and the Dutch-style shallow draught vessels were ideally suited to inshore coastal work. It may, however, simply reflect that Dutch shipwrights were much more available. Dutch-style ships were also generally cheaper than English-style ships and this may have been another significant factor, especially if Christian IV was paying for their construction himself.

### *Norwegian Lensmænd*

Whilst ships ordered from private contractors could be bought on credit, they did eventually have to be paid for. In the financially strained 1630s and 1640s another practice was developed that allowed ships to be supplied at no financial outlay whatsoever to the king or the central government. The wealth of shipbuilding timber in the Norwegian *len* had long been exploited and the royal master shipwrights built many ships there. What made the new system different

<sup>115</sup> Jørgen H. Barfod, *Christian 3.s flåde*, (København, 1995), 208 & 264.

<sup>116</sup> Letter to *rigsråd*, 12 April 1633, *egenhændige Breve*, III, 102–3.

was that the *lensmænd* now acted as shipbuilding contractors. Although the contracts stipulated which royal master shipwright was to be used, the contracts were actually issued to the *lensmænd*. The cost of a ship's construction were specified, but instead of being issued with payments from the *rentekammer* they were simply to deduct these costs from their *len* revenues. There were only two *lensmænd* who had both the facilities and the resources to undertake these contracts but the number of ships provided in this way was significant.

Christoffer Gjølge became the *lensmand* for Nedenæs *len* in 1619, and from 1628 he also became *lensmand* for Mandal and Lister *len*. During the 1620s he supplied a number of ship's boats plus several loads of timber for the navy, the costs of which were to be deducted from his *len* accounts.<sup>117</sup> This may be where Christian IV got the idea from in the first place and in 1631 Gjølge was given his first contract to build a warship. It was to be the same size as Balfour's *Tre Løver* and he was instructed to negotiate with Daniel Sinclair to build the ship. In return Gjølge was granted 6700 Rdlr. 'in specie' for the ship, which should be taken from the revenues collected from his three *len*.<sup>118</sup> It is clear from the contract that Gjølge did not yet have an established shipyard, as he was told to select a suitable site and to erect a smithy.<sup>119</sup> The arrangement with Gjølge must have proved satisfactory because shortly after his first ship was delivered he was building another, and over the next ten years he supplied several more ships using either Svend Andersen or Johan Brandt as the shipwright.<sup>120</sup>

The first ships were built entirely at Gjølge's expense, but from 1635 some contracts included the payment of an initial sum from the *Statholder* in Norway.<sup>121</sup> Although Gjølge received cash payments

<sup>117</sup> Letter to Christoffer Gjølge, 30 October 1624, *Norske Rigs-registranter*, V, 446; H. D. Lind, *Kong Kristian den Fjerde og hans Mænd paa Bremerholm*, (København, 1889), 377.

<sup>118</sup> Contract with Christoffer Gjølge, *Kancelliets Brevbøger*, 23 March 1631.

<sup>119</sup> The chosen site was at Arendal. Probst, *Christian 4.s flåde*, 42.

<sup>120</sup> The ships known to have been contracted to Gjølge are: name not known (1631); *Delmenhorst* (1632); *Sorte Rytter* (1633); *Snarensvend?* (1635); *Tre Løver* (1638); and *Fenix?* (1642).

<sup>121</sup> In 1635 an upfront payment of 1000 Rdlr. was made and in 1638 4000 Rdlr. was paid upfront and the remaining 10,000 Rdlr. was to be deducted from the *len* revenues due from him.

Letter to Christoffer Urne, 14 July 1635, *Norske Rigs-registranter*, VII, 92; Contract with Gjølge, 22 August 1638, *Norske Rigs-registranter*, VII, 427–8.

for these ships they came from local Norwegian sources and the central administration in Copenhagen still did not have to pay anything. The final ship he was contracted to build was financed in a slightly different way. This time he was to receive the total cost of 9000 Rdlr. in specie, but this was to be paid from the toll revenues of a neighbouring *len*.<sup>122</sup> So again, even though he received cash payments it did not involve any outlay from Copenhagen. However, despite now receiving cash for his ships, Gjõe was experiencing financial difficulties and he complained that he had been ruined by the venture.<sup>123</sup> This no doubt contributed to Gjõe being dropped as a shipbuilding contractor, especially as Berns and Marselis were now showing themselves capable of building ships on credit.

The three large warships built by James Robbins in Christiania were also financed using *len* revenues. The contracts were actually placed with Hannibal Sehested, *Statholder* in Norway and *lensmand* in Akershus, who was to pay for the materials and the wages of James Robbins and his workforce.<sup>124</sup> He was only expected to pay for the hull of the first ship, *Hannibal*, but for the two subsequent ships, *Sophie Amalie* and *Prins Christian*, it appears that he was also expected to pay for the masts and rigging as well.<sup>125</sup> Sehested complained, however, that he had already paid too much and that it was therefore impossible to pay for their outfitting.<sup>126</sup> After the death of Christian IV his position became precarious. The ordinary *rigsråd* members turned against the sons-in-law faction to which Sehested belonged and an investigation into his financial administration was ordered. By 1651 Sehested had had to resign his position and was, for the time being, politically and financially ruined.<sup>127</sup>

The use of *len* revenues at source to provide warships for the navy was clearly very attractive to Christian IV. It was also very effective. The navy gained at least nine ships between 1632 and 1650 at little direct cost other than their masting and rigging. The costs of

<sup>122</sup> Contract with Gjõe, 8 June 1639, *Norske Rigs-registranter*, VII, 579–80.

<sup>123</sup> Lind, *Kong Kristian og hans mænd*, 378.

<sup>124</sup> Letter to Sehested, 11 May 1645, *Norske Rigs-registranter*, VIII, 365.

<sup>125</sup> Letter to Sehested, 30 July 1647, *Norske Rigs-registranter*, VIII, 552.

<sup>126</sup> Hannibal Sehested's biographers only mention his shipbuilding activity in passing, in relation to the enquiry into his financial administration. Thyra Sehested, *Hannibal Sehested*, (København, 1886), II, 366; C. O. Bøggild Andersen, *Hannibal Sehested: En dansk statsmand*, I, (København, 1946), 119 & 133.

<sup>127</sup> Steffen Heiberg, 'Hannibal Sehested', *Dansk biografisk leksikon*, 13, 320–6.

their construction were deducted from the *len* revenues at source, which meant that their true cost was disguised. The *lensmænd* simply deducted the cost of the ships from the *len* revenues due from them and, although the *rentekammer* included these deductions in the *len* accounts, no reference was made of the expense of the ships to the navy. The ships therefore effectively resulted in a loss of state revenue rather than being an expense in themselves. These somewhat deceitful arrangements enabled Christian IV to further his case for a reform of the *len* system. He could argue that the Norwegian *len* revenues were falling, whilst covering himself against accusations of spending too much on the navy.

This system could only work, however, if the *lensmænd* had sufficient revenue in the first place, as well as the necessary timber supplies and a suitable shipbuilding site. Both Gjøe and Sehested felt the effects of the great expense of building warships and experienced serious financial difficulties as a result. The Norwegian timber supplies were too valuable not to be exploited, though, and the practice of sending the royal shipwrights to Norway to build warships at the expense of the local administration was continued well after the reign of Christian IV.<sup>128</sup>

### *Gifts, Prizes and Purchases*

So far we have only looked at ships that were ordered directly for the navy to a specified design. However, because of the great expense of warship building not all naval vessels could be acquired in this way. The navy could also obtain ready-built ships by a variety of other means. Some were given as gifts, some were taken as prizes, while others were purchased from merchants. These ships generally tended to be much smaller than those ordered specifically for the navy, and of lesser importance.

Gifts were the least significant means of acquiring ships. Included among the smaller naval vessels are some named after people, such as *Peder Boringholms kreyer* and *Laurids Christensens skib*, which may well have been given as gifts. However, their provenance is not at all

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<sup>128</sup> Jørgen H. Barfod, 'Bygningen af orlogskibe i Norge i slutning af 1600-tallet', *Maritime Kontakt*, 13 (1989), 5–15.

clear. They were certainly not all gifts as, for example, *Gunde Langes Jagt* was seized as compensation for a shortfall in Lange's *len* accounts.<sup>129</sup> In 1604 the merchant Peter Nielsen had an armed merchantman built in France, which turned out to be too large for his own use and so he gave it to Christian IV.<sup>130</sup>

Prize ships could either be those captured in war or those confiscated from merchants attempting to evade tolls. In Frederik II's time and in the early years of Christian IV's reign many English ships were taken as prizes for infringing toll regulations. Moryson noted that one of the navy's ships was English 'lately taken by the Danes in the more Northern parts beyond Norway for some offence in fishing'. Another traveller in 1600 stated that 'In the harbour lie about 10 ships, of which some were taken from the English in the North Sea, some time ago'.<sup>131</sup> Many Dutch ships were also taken as prizes for evading tolls as we can see from their name such as *Hollands Priis Boiert* (Dutch Prize Boyer) and *Forbrudte Hollander* (Confiscated Hollander). In the 1630s we can also see a dramatic increase in the number of Hamburg ships taken as prizes after the dispute over tolls on the Elbe. Ships supplying the enemy with war goods could also be legitimately confiscated and a number of ships from Hanse ports were seized during the *Kejserkrig*.

These ships were not very large and those that were taken into the Danish navy tended to serve as transport ships, although some of the larger armed merchantmen were able to serve as small warships. Most prizes were well used before capture and it was exceptional for them to serve in the navy for more than a few years. Although Denmark managed to gain a significant number of small ships in this way, when it came to the capture of enemy warships in times of war she was not so fortunate. During the Kalmar War the Danish fleet managed to take several Swedish ships, but, apart from one or two exceptions, they were all fairly small. During the Torstensson War only a handful of small Swedish transport ships was captured.

<sup>129</sup> Victor Jensen, 'Om Kong Kristian den Fjerdes Orlogsskibe', *Under Dannebrog*, (1941), 59.

<sup>130</sup> Lind, 'Om Kong Christian den Fjerdes Orlogsskibe', 331-2.

<sup>131</sup> Fynes Moryson, *The Fourth Part of an Itinerary: Of the Commonwealth of Denmarke*, Booke II, Chap. II., Library of Corpus Christi College, Oxford, MS. C.C.C.94, f. 242-3; Suhm (ed.), 'Udtog af en Reise til Danmark Aar 1600', *Nye samlinger til den danske historie*, 3 bd., (København, 1794), 99.

Ships were purchased for the navy from many different sources. Some were bought from foreign powers, such as the Scottish 16-gun *Gilliflowers* acquired in 1605 from James VI and I,<sup>132</sup> and *Markatten*, which was bought in England in the same year. Several years later there was also talk of a ship being built for the Danish navy by the English master shipwright Phineas Pett, but it seems that no ship was ever built.<sup>133</sup>

Several ships were bought in the Netherlands, such as *Hvide Løve* and *Røde Løve*, which were bought for the whaling expedition in 1621 and the small warship *Hollands Forgat* in 1641. Christian IV was not always successful in obtaining the ships he wanted, though. In 1620 he attempted to buy a ship of about 1000 tons in North Holland, but the Dutch government would only grant permission if Christian IV could guarantee that it would not be used in the East Indies. This was considered 'an unreasonable condition and unfit for a friendly Prince' and so the matter was dropped.<sup>134</sup> Several ships were also purchased from Danish and Norwegian merchants, but these were all fairly small.<sup>135</sup> The larger 20-gun *Forlorne Søn* sold to the navy in 1642 by a merchant from Christianshavn, was actually a salvaged English ship that had sunk in the Sound.<sup>136</sup>

### *The Politics of Ship Procurement*

The increasing use of private contractors and *lensmænd* to build the navy's ships must be seen in the light of Christian IV's domestic politics and his power struggle with the *rigsråd*. The origins of this policy, though, probably owes much to chance, since it is more than likely that Peter Michelsen was initially used as an interim measure

<sup>132</sup> James I to Christian IV, 29 May 1605, Meldrum, *Letters of King James I*.

<sup>133</sup> Court Minutes of the East India Co., 22 September 1624, *Calendar of State Papers, (Colonial, East Indies)*, 1622–24, 411. This may simply have been a reference to the rebuilding of *Tre kroner*. A Draught contract was drawn up for its repair sometime around 1624, *egenhendige Breve*, I, 398–9.

<sup>134</sup> Letter Dudley Carleton to Sec. Nauton, 17 February 1620, *Calendar of State Papers, (Colonial, East Indies)*, 1617–21, 351.

<sup>135</sup> Letter to Steen Maltesson, 8 July 1603, *Norske Rigs-registranter*, III, 23; Letter to Sten Villumsen, 4 October 1634, *Norske Rigs-registranter*, VI, 696; Lind, 'Om Kong Christian den Fjerdes Orlogsflaade', 330–1.

<sup>136</sup> Bruun, *Curt Sivertsen Adelaar*, 421; Rigsarkiv, Rentemesterregnskaber, 1642/43.



after the imprisonment of David Balfour. However, by successfully building warships outside the state system, Christian IV was able to gain significant independence in developing the navy away from any involvement from the *rigsråd*.

However, the decision to build ships in Schleswig and Holstein was taken much earlier, with Petersen and Balfour both building ships in the duchies. The king knew that this would provide him with a virtually unassailable position over who owned and controlled the navy, and the decision to use private contractors can be seen as a way of gaining even greater autonomy. In the period before the *Kejserkrig* this policy was definitely driven by considerations of political power and foreign policy ambitions.

In the period after the *Kejserkrig* financial considerations played a much more important role. The growing financial crisis made the use of private contractors, who were able to supply ships on credit, an attractive proposition. Christian IV also used the fact that he built so many warships in the duchies in the early part of his reign as a lever against the *rigsråd* in his attempt to gain further financial support for the navy. Financial considerations also precipitated the use of Norwegian *lensmænd* as shipbuilding contractors. However, finance was not the only motive behind this policy, and Christian IV's political manoeuvring to force a reform of the *len* system also certainly played a part.

Table 3. *Method of Acquisition of Large and Medium Warships*

|           | Royal<br>Shipwrights | Private<br>Contractors | Norwegian<br><i>Lensmænd</i> | Prizes &<br>Purchases | Not<br>Known |
|-----------|----------------------|------------------------|------------------------------|-----------------------|--------------|
| 1596–1610 | 5                    | 0                      | 0                            | 0                     | 4            |
| 1611–1620 | 2                    | 3                      | 0                            | 2                     | 2            |
| 1621–1630 | 9                    | 3                      | 0                            | 0                     | 4            |
| 1631–1640 | 1                    | 1                      | 4                            | 2                     | 1            |
| 1641–1650 | 0                    | 7                      | 5                            | 8                     | 2            |

Table 3 shows the methods of acquiring large and medium warships during Christian IV's reign. The most striking thing that this table shows is the dramatic change in the role of the royal master shipwrights. In the early part of the reign they built the majority of new warships, but after the *Kejserkrig* their role changed significantly. The

ships they built thereafter were almost exclusively built for the Norwegian *lensmænd*, with the remainder of the warships built by private contractors. In the 1642 budget estimate there was a provision of 18,000 Rdlr, for the construction of two warships annually, but in fact after around 1640 the building of larger warships directly financed by the *rentekammer* came to a complete standstill. During the investigation into Corfitz Ulfeldt's embezzlement it was stated, with probably just a little over-exaggeration, that not one ship was built at Bremerholm between 1642 and 1648.<sup>137</sup> Even after the loss of so many ships during the Torstensson War the replacement ships were financed by the *lensmænd* or by private contractors' credit. The sudden rise of purchases at the end of the reign can be explained by the fact that many of the armed merchantmen that served in the war were purchased as short-term replacements for those lost in the war. Whether their owners ever received full payment remains doubtful.

We cannot draw such firm conclusions about the provision of the smaller ships and galleys since the origin of the majority of them remains unknown. However, from the information we do have we can see that the royal shipwrights continued building a fairly steady number of these vessels throughout the reign, while private contractors and *lensmænd* built only a handful. This can be explained in a number of ways. The royal shipwrights were paid an annual wage and while they were not building large warships they were kept occupied with the construction of smaller vessels, using the timber supplies readily to hand. Also, if private contractors were used, either because of financial or political reasons, it made sense for Christian IV to use them to build as large ships as possible. In this way both the benefits of using credit and the political weight of owning large warships were maximised. It was hardly worth negotiating with private contractors to build small ships if the royal shipwrights could build them in their slack periods or if they could be purchased ready-built from other sources.

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<sup>137</sup> H. D. Lind, 'Underslæb paa Bremerholm under Korfits Ulfeldts Finansstyrelse', *Historisk tidsskrift*, 6 Rk. V bd. (1895), 372–3.

*The Procurement of Ordnance*

Christian IV regarded his warships and their ordnance as one unified weapon system and we can see that the heavy investment in large gun-carrying warships at the start of his reign was equally matched by investment in heavy cannon that were to serve on them. As with warships, ordnance could be procured by a number of different methods. Some cannon were manufactured in the state cannon foundries, some were imported, some were taken as prizes, some were confiscated or compulsorily purchased from ships passing through the Sound, and a small number were given as gifts.

Cannon manufacture in Denmark was rather small scale in the sixteenth century. There was only one state foundry in Copenhagen, which Frederik II expanded in 1586 when it was moved into an old monastery that had been seized from the church. Only bronze cannon were manufactured here. As there were no usable copper ore deposits in Denmark or Norway the supply of raw material was always a problem and the majority of bronze therefore came from re-cycling. Old or damaged cannon, church bells and even old cooking pots were melted down in order to cast new cannon. Church bells were the single largest reserve of bronze in the country and on a number of occasions churches across Denmark were ordered to supply large numbers of bells. Bronze cannon were supplemented by large numbers of relatively small wrought iron guns that were imported largely from the Netherlands.

During the Nordic Seven Years War Danish naval ordnance was found to be lacking, both in terms of the numbers of cannon and their size. Swedish firepower was significantly greater than Denmark's and this was one of the main contributory factors in the defeat of the Danish navy in the war. Frederik II sought to counter this threat by increasing the production of cannon, which could only be achieved by forcing churches to supply a huge number of bells to the foundry. The lack of a native supply of copper was particularly hard to bear as Sweden had a rich supply and was quickly becoming one of the leading exporters of bronze cannon in Europe. It is therefore no surprise to find that Denmark eagerly accepted 97 tons of copper as part payment for the Älvsborg ransom that was part of the peace settlement.

During the war Frederik II also began importing large numbers of cast iron cannon from England, and continued to do so after the

war while he was rebuilding the navy. Between 1566 and 1579 over 500 cannon were supplied, most of which were large calibre weapons destined for the navy. When Christian IV took over the throne he therefore inherited a reasonably well appointed arsenal consisting, in 1597, of 171 bronze cannon, 306 cast iron cannon and 359 older and smaller wrought iron cannon.<sup>138</sup>

As might be expected, Christian IV took a great personal interest in the supply and development of ordnance and proceeded to greatly expand on this total.<sup>139</sup> He established a new cannon foundry at Helsingør in 1599 and in 1610 he also moved the Copenhagen foundry into a new and larger purpose-built building. As with his shipwrights he seems to have brought in master craftsmen from abroad to manufacture the cannon. Most seem to have been German such as Hartvig Kvelckmeier, Felix Fuchs and Claus von Dam. Even the term given to cannon founders was the German *rotgieter*. The success of this cannon founding activity was seen during the 1606 visit to England when it was noted of *Tre kroner* that 'shee boare in her, three tyer of Ordinance, all brass, both great and large'.<sup>140</sup>

The raw material for the new cannon again came from church bells, following instructions to confiscate yet more in 1601. In order to safeguard the reserves of copper in Denmark Christian IV imposed an export ban on all copper goods in 1603. In the period up to 1610 more than 200 bronze cannon were cast. Christian IV also began to import English cast iron cannon again in 1605, with at least 150 being supplied by one English contractor. By 1610 Christian IV's arsenal consisted of 437 bronze cannon, 811 cast iron cannon and 166 wrought iron cannon. The trend towards large calibre weapons was marked. In 1597 the largest calibre weapons accounted for about one third of the total, while in 1610 they accounted for more than two thirds. The old wrought iron cannon were largely redundant, at least in naval terms, and they were steadily disposed of.

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<sup>138</sup> The arsenal in Copenhagen was used principally, though not exclusively, to house the cannon used by the navy. The inventories of the arsenal therefore provide a good estimation of the numbers of naval cannon. Michael H. Mortenson, *Dansk Artilleri Indtil 1600*, (København, 1999), 159–219 & 273–286.

<sup>139</sup> An example of his interest is demonstrated by the fact that he personally designed and cast a large bronze cannon decorated with rose motifs, known as the *Rosenkartov*, in 1601.

<sup>140</sup> *The King of Denmarks Welcome*, pamphlet printed by Edward Allde, 1606, British Museum, 1093. b. 71.

The large numbers of cannon being produced allowed for a certain degree of standardisation. In 1603 Christian IV ordered 100 cannon of the same design to be cast by the two foundries, which were completed within four years. Another large series of 112 was begun in 1630, but not completed until 1655. A number of smaller series of between 12 to 52 cannon were also produced.<sup>141</sup>

Christian IV also attempted to establish an iron cannon founding industry to exploit the iron ore reserves that were being found in Norway. In 1610 Christian IV contracted the German smith Paul Smelter to establish an ironworks at Bærum, near Oslo. This showed some early promise, although production remained fairly small and only a few small cannon were produced. The works were taken over by Gabriel Marselis the younger in 1640 who rebuilt and enlarged them, but still the number of cannon produced was small. Meanwhile Albert Baltser Berns had also established a bronze cannon foundry in Glückstadt, operated by the Flemish gunfounder François de Roen. He offered to supply as many cannon as Christian IV wished and in 1640 the first order for 30 cannon was duly placed. This foundry operated as a private concern under licence and Berns was free to supply cannon to other clients, although these were taxed, and Christian IV retained first rights on all cannon produced. The value of this additional production capacity was seen after the Torstensson War when it played an important role in re-arming the navy.<sup>142</sup>

Arsenal inventories do not exist for the latter part of Christian IV's reign, but detailed gun inventories of the Danish ships captured at Femern in 1644 show that they were almost entirely armed with bronze cannon.<sup>143</sup> This suggests that the heavy investment in bronze cannon early in the reign continued through the 1620s and 1630s and that the role of imported cast iron cannon diminished significantly. Despite such a heavy loss of ordnance, over 400 naval cannon, during the Torstensson War the arsenal still contained 634 bronze cannon in 1649 which, including new productions in the intervening years, indicates just how much Christian IV had invested in heavy bronze ordnance for his navy.

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<sup>141</sup> Probst, *Christian 4.s flåde*, 52–56, 68–70, 131–32 & 190–92.

<sup>142</sup> Lauridsen, *Marselis konsortiet*, 51–54.

<sup>143</sup> Louis de Geer's archive, Riksarkivet, Stockholm, Leufastasamlingen, vol. 47. I am indebted to Jan Glete for providing this reference.

*Danish Shipbuilding in Context*

Warship design in the late sixteenth century had been rapidly improved by English and Dutch shipbuilders. In England the 'race-built' ships of the 1570s created a new type of warship that reduced the high fore and aft castles and provided a longer gun deck, making the ships much more manoeuvrable and enabling a much heavier broad-side attack to be carried. Fighting at long-range using heavy guns became standard English naval policy and its dramatic success in the war with Spain was noted by the other maritime powers.<sup>144</sup> Christian IV, by constructing large warships designed to carry a heavy armament, using British shipbuilding methods, and investing in heavy bronze cannon produced by German gunfounders, deliberately imported this new type of warship technology into Denmark. This practice was begun by Frederik II in the aftermath of the Nordic Seven Years War, but it was taken up much more comprehensively and effectively by Christian IV in order to create a thoroughly modern European navy.

The pivotal role that Christian IV played in the design of his country's warships was not unique in early modern Europe, but it was exceedingly rare, with perhaps Henry VIII of England and Peter the Great of Russia the only other monarchs with quite as much influence. The system required the king to possess a very detailed knowledge of ship design and construction, which Christian IV certainly had. However, having such a strong-willed monarch who thought he always knew best did not always produce the best results, as we have seen with the Kolding galley and *Trefoldighed*.

In other countries where the naval bureaucracy was more mature the role of the king in ship design was minimal. The monarch may have had a personal interest in certain ships, particularly the prestige ships, but in general the naval administrations ordered ships to their own specifications. That Christian IV knew the fundamentals of ship design is undisputed, but whether he was really competent to either design or assess the designs of the increasingly larger and more complex warships is debatable. From the one plan that we can definitely attribute to him (Plate 16) it appears his skill was limited,

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<sup>144</sup> Geoffrey Parker, 'The *Dreadnaught* Revolution of Tudor England', *Mariner's Mirror*, 82 (1996), 269–300.

even for small craft. Using this limited knowledge to design the model for *Trefoldighed*, the largest ship in the navy at the time, must be called into question, but Christian IV could of course simply argue that the shipwright had not carried out his instructions properly.

Despite the rudimentary nature of naval bureaucracy in Denmark, certain developments in ship design were very advanced. Ship models were used in Venice and Spain in the sixteenth century, but their use as a design tool in Denmark was very early for northern Europe. The first known use of a model in the design process in England is the one mentioned in connection with Phineas Pett's *Prince Royal* in 1607,<sup>145</sup> but their use did not become standard until the latter half of the seventeenth century. Danish shipbuilding contracts were also relatively advanced for their day. From the scant information we have from other countries we can see that the Dutch navy issued contracts to private contractors in the sixteenth century, but the earliest known contract for an English naval ship came as late as 1649.<sup>146</sup> The stipulation of draught in a contract is extremely advanced. Balfour's *Hummeren* contract pre-dates by nearly 50 years the treatise by the English shipwright Anthony Deane, which is generally taken as the first evidence of a calculation of draught.<sup>147</sup>

In terms of the actual design of ships we can see that Danish naval architecture was very advanced. David Balfour in particular produced some very successful ship designs that were based on English design techniques, but adapted to the particular requirements of the Danish navy. In effect, he developed an extremely innovative synthesis of English and Dutch design methods. In Sweden both British and Dutch shipwrights were employed, but there is no evidence to suggest that they adapted their design methods in the way that Balfour did in Denmark.

The procurement of warships in Denmark was little different from many of the maritime powers in that they also used a mix of state

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<sup>145</sup> Richard Barker originally suggested that Mathew Baker used models, citing evidence from his will, but he later revised his opinion on this and now suggests that the 'models' were in fact plans. Richard Barker, 'Design in the Dockyards about 1600', in Reinders and Paul (eds.), *Carvel Construction Technique*, (Oxford, 1991), 61–69.

<sup>146</sup> R. C. Anderson, 'A Collection of Shipbuilding Contracts', *Mariner's Mirror*, 41 (1955), 47–52.

<sup>147</sup> Brian Lavery, *Deane's Doctrine of Naval Architecture* (London, 1981). Balfour's contract is published in full in Bellamy, 'David Balfour'.

employed shipwrights and private contractors. In England the navy employed its own master shipwrights who built warships in the royal dockyards, but it was also common practice for the Crown shipwrights to build naval vessels at their own private yards. In Spain there was a growing trend towards using contractors rather than state shipwrights.<sup>148</sup> In France, Richelieu's new Atlantic navy was almost entirely dependent on either purchasing ships from the Netherlands or employing Dutch private contractors in French ports.<sup>149</sup> In Sweden the trend was also away from Crown shipwrights towards the use of private contractors. Royal shipwrights continued to build ships in the naval shipyards, but private shipyards, often run by Dutch shipwrights, were also increasingly awarded contracts to build warships.

Denmark was therefore not alone in changing the methods by which warships were built, but the trend towards diversification was very much linked to Christian IV's difficulties with the *rigsråd*. The use of Norwegian *lensmænd* as shipbuilding contractors, in particular, seems to have been a uniquely Danish solution to a particular Danish political problem. After the introduction of absolutism in 1660, Bremerholm once again became the main centre for warship building and the royal master shipwrights regained their position at the centre of naval construction. This is not to say that private contractors and local government officials were not used by later regimes, but the need for them was drastically reduced after the removal of the *rigsråd* and the reform of the *len* system. The navy then belonged unequivocally to the king and there was no constitutional argument over who paid for it or how it was used.

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<sup>148</sup> David Goodman, *Spanish Naval Power, 1589–1665: Reconstruction and Defeat* (Cambridge, 1997), 124–32.

<sup>149</sup> Alan James, *The Navy and Government in Early Modern France, 1572–1661* (Woodbridge, 2004), 108–23.



## CHAPTER FIVE

### THE STRENGTH OF THE NAVY

The uses to which Christian IV could put his navy and its international status depended on the size and composition of the navy. The aim of this chapter is to identify the overall number of ships in the navy, highlight the main characteristics of the different types of ship and to see how Christian IV's navy compared to other navies in Europe.

#### *Developing a Ship List*

It is difficult to obtain accurate information on the number and size of ships in Christian IV's navy. In common with most other navies at this time there was not yet any formal navy list and the only way to establish how many ships there were is to scour the remaining archives for clues. The best source of information comes from the various dockyard accounts and the state payroll. These listed the victuals, materials and ordnance issued, and the crews assigned to ships.<sup>1</sup> However, these accounts are of limited use since ships are only listed if they actually received victuals, spares or ordnance, or were manned in any given year. If a ship was laid up, or if, for example, it happened to be in the East Indies and no victuals or stores were issued to it, then it may not necessarily appear in the accounts. The survival of documents is also patchy and for many years there are simply no accounts at all.

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<sup>1</sup> Rigsarkiv, Marinearkivet for 1655, Bremerholms Proviantskrivers Regnskaber; 13. 1627/28; 14. 1642/3, 1644/45, 1645/46, 1646/47?, 1647/48; Rigsarkiv, Marinearkivet for 1655, Bremerholms Materialskrivers Regnskaber; 16. 1593/94; 17. 1598/99; 18. 1626/27, 1627/28; 20. 1628/29; 21. 1629/30, 1630/31, 1631/32; 22. 1633/34; 23. 1634/45; 24. 1635/36; 25. 1638/39, 1639/40; 26. 1643/44 1644/45; 27. 1650/51; Rigsarkiv, Fæstningsregnskaber, IV, c. 1–2, Københavns tøjhusregnskaber, 1592/93; 1602–04; 1607/08; and 1609/10; Rigsarkiv, Rentekammer Udgift Conto I.a., Klædekammer Regnskaber, 1607/08; 1621/22; 1622/23; 1624/25; 1625/26; 1626/27; 1628/29; 1629/30; 1630/31; 1631/32; 1632/33; 1633/34; 1634/35. After 1635 the men were no longer listed under the ships they served in.

The accounts that do survive provide valuable information on the number of ships but unfortunately have limited use in determining their size. The victualling lists give the number of crew on individual ships, but this can sometimes be misleading if a large number of seamen are billeted aboard a ship over the winter. The materials accounts provide no easy means of assessing the size or type of ships, other than the quantity of material issued, which again can be misleading, and only one of the arsenal accounts (1609/10) details the number of cannon issued to individual ships. In all these accounts the ships appear in random order, although the galleys and transport ships are listed separately from 1643/44 in the materials accounts and from 1644/45 in the victualling accounts.

Fortunately contemporary lists of ships for individual years can be found in a number of sources, which help to fill the gaps. A list of ships in operation in 1610 has been published and the reports of the Swedish agent in the Sound give useful details for the 1620s.<sup>2</sup> Three other Swedish lists survive, two from the early 1630s and one from 1647.<sup>3</sup> There is also a Danish list from 1630 that gives the number of both cannon and crew.<sup>4</sup> The letters of Christian IV give lists of ships for certain years between 1628–1645, with varying degrees of completeness. Two extremely useful lists also exist for 1653, which were drawn up in connection with the Danish-Dutch alliance of that year. The first is an official Danish document and the second was made by the Swedish resident Magnus Durell.<sup>5</sup> Both give the age and place of building for many ships as well as principal dimensions, the number of cannon ports, cannon, and crew numbers. The contracts for the building of warships likewise give

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<sup>2</sup> 'Mogens Ulfelds Tog udi Østersøen med Kongelig Majestets Skibs-flode 1611(!)', *Danske Magazin*, Rk. 1, Bd. 1, (1745), 114–118; Leo Tandrup, *Svensk agent ved Sundet*, (Aarhus, 1971), 118–21, 451–3, & 517–8.

<sup>3</sup> One appears to have been written around 1630 (Riksarkivet, Stockholm, Kammararkivet, Sandbergsska samlingen, fol Z 2798), the other has been dated to 1637 (Riksarkivet, Stockholm, Flottans Handlingar, Sjöexp. Vol. I–II, læg 24. (M 1848)). I am indebted to Niels M. Probst for supplying copies of these. The 1647 list is published in Christian Bruun, *Curt Sivertsen Adelaer*, (København, 1871), 420–22.

<sup>4</sup> Rigsarkiv, Danske Kancelli B164, IX, Pk. 07, læg 30.

<sup>5</sup> The Danish document is published in Preben Holck, 'Flaadelister omkring Krigsaarene 1644–45', *Tidskrift for Søvesen*, 114, (1943), 483–504 & 545–65; the Swedish document in Suhm (ed.), 'Magni Durells relation om Danmark', *Samlinger til den danske historie*, (København, 1784), 2 bd., III hæfte, 78–82. It is also published in Bruun, *Curt Sivertsen Adelaer*, 422–9.

important dimensions. Many have survived and in most cases the ships can be identified. Occasional snippets of information can also be found in Christian IV's letters and in many other contemporary sources too diverse to enumerate.

Despite its reputation, there has been surprisingly little published on the ships of Christian IV's navy. H. D. Lind published a list of ships in 1890 that contained a total of 276 vessels.<sup>6</sup> Unfortunately this is not as comprehensive or as accurate as it might have been since he did not consult the dockyard accounts, which include many more ships and contain details that contradict some of his assumptions. In the 1940s Victor Jensen also published a list of Christian IV's ships, based primarily on Lind's work, and Preben Holck published more accurate details of the fleet during the Torstensson War.<sup>7</sup> In recent years Niels M. Probst has carried out some pioneering work on tracking down details of even more ships, but his full list remains, as yet, unpublished.<sup>8</sup>

As a result of the present research a total of 236 warships and 200 transport ships have been identified, but this fleet list is still far from perfect. Confusion arises with the language and spelling of some of the ships, for example *Raabukken* (the Roebuck) may, or may not, be identical with *Hjorten* (the Hind), but *Hirschjagt* can definitely be taken as simply a Germanic version of *Flyvende Hjort* (the Flying Hind). Some ships also appear to have had a descriptive name as well as a proper name, such as *Prindsens spil Jagt* (the Prince's pleasure yacht) that was also known as *Gule æble* (Yellow Apple). To complicate matters even further some ships had their names changed, like *Patentia*, which was originally named *Charitas Patriæ*, and *Papegoien*, which was renamed *Stormarn* before it was completed. Further confusion also arises when a ship's name appears twice in a list. There is no way of determining if there are two separate ships of the same name, whether the same ship has been entered twice, or if the clerk has

<sup>6</sup> H. D. Lind, 'Om Kong Christian den Fjerdes Orlogsflaade, III. Flaadeliste', *Tidskrift for Søvesen*, (1890), 409–52.

<sup>7</sup> Victor Jensen, 'Om Kong Christian IV's Orlogsflaade', *Under Dannebrog*, (1940), 84, 90–92, 99–102; (1941), 59, 74–6, 109–110.; Holck, 'Flaadelister omkring Krigsaarene 1644–45', 483–504 & 545–65.

<sup>8</sup> I am indebted to Niels M. Probst for sharing his data with me, and to Jan Glete for supplying his own annotations to the list. Detailed ship lists for a number of discrete years are published in Niels M. Probst, *Christian 4.s flåde*, (København, 1996).

made a mistake in entering the name of a similarly named vessel. For example in the 1610 list *Markatten* appears twice, but it is likely that the second is a mistaken transcription of *Makarel*. The full list of ships is given in Appendix 1.

### *Ship Types*

The various roles that Christian IV's navy undertook required a number of different types of vessel. In the account books, and then only from 1643, there are only ever three classifications of ship given: warships; galleys and jagts; and transport ships. The variation in the size of warships was considerable and in order to analyse them in more detail it is necessary to further subdivide them into large, medium or small warships. Following the lead of Jan Glete the classification is based on displacement rather than by their number of cannon.

Using either method for this period is inherently problematic due to the fragmentary nature of the sources, but using cannon is undoubtedly more problematic as there is a danger that a small ship carrying small calibre guns would be classed alongside a large ship that not only carried larger calibre guns but could be sailing with only a fraction of the cannon it was designed to carry. It was in fact highly unusual for the number of cannon carried to equal the number of cannon ports built into the ship's structure. The number of cannon available in the arsenal at a particular time or stability and sea-keeping requirements could easily prevent a full load from being carried. In Magnus Durell's account the first twenty ships listed had a total of 1047 ports, but the number of cannon carried totalled only 882, so on average a ship carried roughly only 85 percent of its capacity, although two of the ships did actually carry two cannon more than the number of ports. In wartime the total number of cannon available was distributed not just to the warship fleet, but also to hired merchantmen, so ships would carry much less than their full capacity. In the biggest fleet action of the reign at the Battle of Kolberger Heide the ships managed to carry 93 percent of their cannon capacity,<sup>9</sup>

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<sup>9</sup> Niels M. Probst, 'Naval Operations during the Torstensson War, 1643–45', *Revue Internationale D'Histoire Militaire*, 84, (2004).

but after the defeat of Femern Belt the remaining ships in the navy carried only 65 percent.<sup>10</sup>

The types and calibres of cannon that were carried were equally variable. The *Store Sophia*, for example, was designed to carry 54 guns, but there was no consistency in the types of cannon it carried. A list from around 1630 states that there were four 36 pounders and twenty 20 pounders on the lower deck, plus twenty cannon between 16 and 20 pounds and several other smaller pieces and falconets on the upper deck.<sup>11</sup> Around 1637 it is noted to have carried a total of 54 cannon made up of two double cannon of 50 pounds, twenty demi-cannon of 26 pounds, two serpentines of 20 pounds, twenty of 16 pounds and two of 10 pounds, plus two 5 pounders, four 1 pounder falconets and two stone pieces.<sup>12</sup> In 1644 it carried 48 cannon made up of four double cannon of 50 pounds, twenty demi-cannon of 26 pounds, twenty serpentines at 10 pounds, plus two 5 pounders and two 1 pounder falconets.<sup>13</sup>

The calculation of displacement is also fraught with difficulty. Tonnage is the one measurement that is most notably lacking in most of the sources. This was simply not relevant for the purposes of the dockyard accounts and does not even appear in the contracts for the building of ships. Only the two Swedish lists from the 1630s give any systematic outline of the navy's tonnage and these do not tally for all ships. Occasional references to tonnages for individual ships can also be found in various sources but the information is very sporadic. For those ships whose tonnage or measurements are known the calculation of displacement is relatively straightforward, but for many ships we simply do not have this type of information and in these cases a certain amount of educated guesswork is involved, based on the number of cannon or crew. Where little or no information is available for a ship, however, it can reasonably be assumed that it was probably a small and fairly insignificant vessel.<sup>14</sup> Despite

<sup>10</sup> Rulle pa kong Ma: Orlogskibe (1645), Rigsarkiv, Danske kancelli, B164, Diverse, IX, Pk. 07, læg 36.

<sup>11</sup> The Swedish ship list dated around 1630, previously mentioned.

<sup>12</sup> Swedish ship list 1637. Riksarkiv, Stockholm, Flottans Handlingar, Sjöexp. Vol. I-II, læg 24.

<sup>13</sup> A receipt of all weapons put on board from March 1644, quoted in Ole Lisberg Jensen, 'Orlogskibet *Store Sophia* som forliste år 1645 i Göteborgs skærgård', *Maritime Kontakt*, 9 (1985), 5–20.

<sup>14</sup> For displacement figures I rely largely on Probst's calculations. In some cases I have used Jan Glete's suggestions.

these difficulties displacement is still a far more reliable basis on which to classify the size of ships. Large warships are taken to be those of over 1000 tonnes displacement (roughly equivalent to 50 or more cannon), medium warships of 501 to 1000 tonnes (roughly 20 to 50 cannon), and small warships of up to 500 tonnes (generally less than 20 cannon).

The largest ships in the navy were the so-called prestige ships that were designed more as a symbol of sea power than as useful fighting warships. A number of these had been built by Frederik II, such as *Fortuna*, which was described by Fynes Moryson in 1593 as the most imposing ship in the navy:<sup>15</sup>

The burthen whereof was 1400 tonns (the very ballast being 700 tonns), and to man and furnish the same, were required 400 Marines, 300 Gunners, and 700 Soldiers, . . . and the breadth was 25 Ells the length of the Keele 67 and above the hatches 108 Ells, the depth of the hold was Eleuen Ells and a halfe, and it bore in the lower orlob 22 Cannons, in the middle 22 Culverines, and in the upper orlob 24 Sakers, the mast was 37 fadoms long, and 36 Palmes Girth and it cast out seuen Ankers lying in the harbor.

Some of these figures are no doubt exaggerated but it was clearly still a very impressive ship. Although this ship survived into Christian IV's reign it was degraded to serve as a transport ship. The most notable prestige ship built for Christian IV in the early years of his reign was the *Tre kroner* (Three Crowns), completed in 1604. This was a very large ship of 2100 tonnes displacement. As we have already seen, it was larger than intended by Christian IV, but he decided to make the best of it and its size and name, referring to the union of Denmark, Norway and Sweden, provided a signal to his maritime and imperial pretensions.<sup>16</sup> It certainly did its symbolic job well, as can be seen from the praise it drew from observers during Christian IV's visit to England in 1606:

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<sup>15</sup> Fynes Moryson, *The fourth Part of an Itinerary*, Library of Corpus Christi College, Oxford, MS. C.C.C.94, f. 242–3, published in: Martin Bellamy, 'En englænders beretning om den danske flåde, 1593', *Marinehistorisk Tidsskrift*, 4/1995, 106–10.

<sup>16</sup> The three crowns had been used on the Swedish coat of arms since the fourteenth century. Jan Glete suggests that Christian IV's ship may have been a symbolic countermeasure to Duke Karl's ship of the same name of 1599. (Personal correspondence).

the Admirall, wherein his owne person came, being a most huge ship, is esteemed of 1500 tunnes; which ship is so adorned with rich gold and very excellent workemanship, as many thousands, upon report thereof, of purpose have gone to Gravesend, where she doth ryde, to view her. Besides the beautie and riches of this great ship, she is appointed with most huge ordinance, men, and victualls, fit for so Kingly a presence.<sup>17</sup>

However, in practice both *Fortuna* and *Tre kroner* proved to be poor sailers, with deep draughts that limited their usefulness in the Baltic. It was noted of the *Fortuna* that 'the best Seamen judged [it] more fitt to serue as a ffort in a Riuer than to fight at Sea where lesse and swifter Shippes would haue great advantage of it'.<sup>18</sup> In fact both ships seem to have spent most of their time laid up in Copenhagen doing nothing, with *Tre kroner* not even participating in the Kalmar War.

Far more useful than these monsters were fast well-armed warships of around 1200 tonnes displacement and between 50 to 60 cannon.<sup>19</sup> These were much more suited to the type of operational duties that were most frequently encountered, such as convoy protection, blockading ports and inshore coastal bombardment. Although smaller than the true prestige ships they were still large enough to instil great admiration. The *Store Sophia* of 1627 was displayed to great advantage during the wedding celebrations for Prince Christian (V) in 1634, when the French ambassador Charles Ogier observed that:

it is so great that it can rightly be called a castle or a town, it is surely 50 paces or more in length and has 50 cannon. It has three decks, the uppermost of which is open to the elements, on the second are 20 cannon, and on the third are the rest. These three splendid decks are free from any obstruction. In the hold all kinds of supplies and victuals are stowed. In the poop are four compartments or cabins on top of each other. The uppermost is for the skipper, the second for the captain, and the third, in which there are six beds, three on either side, is for the king or admiral. In the fourth and last compartment

<sup>17</sup> Henry Roberts, *The most royall and honourable Entertainment of the most famous and renowned King Christiern the Fourth, King of Denmarke*, 1606. Reprinted in Nichols, *Progresses of James I*, (London, 1828), II, 56–57.

<sup>18</sup> Fynes Moryson, *The fourth Part of an Itinerary*, f. 242–3.

<sup>19</sup> Niels M. Probst, 'Argo 1602 and *Tre Kroner* 1604: Two Danish warships designed using English methods', in Knighton and Barker (eds), *Fragments of Ancient English Shipwrightry*, Navy Records Society (forthcoming). I am indebted to the author for supplying an advance draft of this work.

is the magazine, in which all types of guns, swords, bombs, fireballs, grenades, fire-lances, and various other instruments of war, which wicked and sinful men have invented in their madness. All of which we were shown, piece by piece. The main mast can scarcely be encircled by two men with outstretched arms. My hands were not able to encircle the anchor cable. The ship's sides are three or four feet thick.<sup>20</sup>

The ships that made up the core of the main battle fleet were medium sized battleships of the type generally termed galleons.<sup>21</sup> These were large enough to provide sufficient firepower in an all-out battle in the open sea, but not so large as to make them unmanoeuvrable. A typical example of one of these vessels is *Oldenborg*, built in 1628 as a three-masted, two-decked warship capable of carrying 42 cannon.

The largest proportion of the fleet was made up of small warships of 500 tonnes displacement or less. This in part reflected the battle tactics of the time, which were based on large warships being supported by a number of smaller warships, but small swift and manoeuvrable warships were also needed for coastal defence and convoy protection, to combat toll evasion and piracy, and for despatch duties. They were also well suited for expeditionary purposes. They varied from small vessels that could be fitted with a cannon or two in wartime to quite large ships, such as the *Hummeren* or *Fides* class, which were almost on a par with the medium sized warships.

Although the many different types of small warship cannot be identified with any degree of accuracy some ships' names often give a clue as to their type. The more common types were the *Pinas*, *Flejte* and *Pink*, which (usually) carried three square-rigged masts. The *galiot* was a smaller open decked ship with a fore and aft rig.<sup>22</sup> The definitions at this time were far from rigid and the differences between the types could often be minimal. There is also a great laxity in terminology with some vessels being indiscriminately classified from year to year. Another small ship type was the *pram*, which was essentially

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<sup>20</sup> Charles Ogier, *Ephemerides, Sive Iter Danicum*, . . ., (Paris, 1656), 59–60. This translation is based to a large extent on J. H. Schlegel's German translation, published in *Samlung zur Danischen Geschichte*, (1773).

<sup>21</sup> The term galleon was never apparently used in the Baltic but the Danish warships were in many respects similar to those described as galleons in the English and Dutch navies.

<sup>22</sup> Ole Mortenson, *Renæssancens Fartøjer: sejlads og søfart i Danmark 1550–1650*, (Rudkøbing, 1995).



a dockyard barge that could be mounted with a number of cannon to act as a temporary block-ship. Royal transport ships were also frequently converted into warships by fitting them with a small number of cannon. The list of small warships given in Appendix 1 includes all vessels that at some stage in their career carried cannon. Although some were intermittently classified as cargo ships they obviously had the potential to be fitted out as a warship if need be.

Galleys were introduced into the Danish navy in the mid sixteenth century and were used principally for coastal protection work and for action against pirates. They were stationed in harbours all over the realm, particularly in Norway. Technically most of them were either smaller versions of Mediterranean style galleasses or a form of square-rigged oar/sail hybrid, or in some cases sailing ships with auxiliary oars. They had as many as three masts as well as oars, and had a gun deck over the oarsmen with a number of small calibre transverse mounted cannon. Typically they were around 25–30m long, had 30–50 oars, and were also able to sail in squadron with other sailing ships.<sup>23</sup> There must also have been a number of more traditional galleys since the only surviving plan of an oared vessel from the period shows a classic Mediterranean style galley section.<sup>24</sup> The galley oars were manned by soldiers during amphibious operations with seamen probably also being used in peacetime. There is some evidence to suggest that prisoners from the Copenhagen dockyard were also used, but given the climate it is unlikely that large numbers of prisoners were permanently chained to the oars.<sup>25</sup>

Towards the end of the *Kejserkrig* Christian IV ordered most of the regional galleys to be sent to Copenhagen, presumably to assist in preventing the threatened sea-borne invasion. However, they were of poor quality and Christian IV stated that they were ‘absolutely dilapidated’ and provided ‘more hindrance than help’,<sup>26</sup> which no doubt influenced his decision to sell them all off in 1631 ‘to whoever

<sup>23</sup> Thomas Hauge, ‘Galeier i den dansk-norske marine’, (*Norsk Tidsskrift for Søvesen*, 69, 1954, 351–8.

<sup>24</sup> Rigsarkiv, Søetatens Kort og Tegning Samling, Des. E.3.

<sup>25</sup> Jan Glete, ‘Amphibious Warfare in the Baltic, 1550–1700’, in D. J. B. Trim and Mark Charles Fissel (eds), *Amphibious Warfare 1000–1700: Commerce, State Formation and European Expansion*, (Leiden, 2006), 127–28. The prisoners are discussed in more detail in Chapter Seven.

<sup>26</sup> Letter to *rigsråd*, 18 August 1629, C. F. Bricka & J. A. Fredericia (eds.), *Kong Christian den Fjerdes egenhændige Breve*, II, 222.

desires them'.<sup>27</sup> This was probably just an over-reaction on Christian IV's part, and it can be seen from the fleet list that many of the galleys remained in service. The usefulness of galleys as a class was certainly not questioned and many more were constructed after this date.

There was also a smaller class of galley called *roersiachter* (row-yachts) that were 'built in the Norwegian manner'.<sup>28</sup> This would suggest that they were clinker built and may, in contrast to the larger galleys, have been derived from the Viking ship tradition.<sup>29</sup> They carried around six small cannon and were propelled by 12 oars. Some were also converted by cutting down larger galleys:

the galley, which Rasmus Samsing will have for a row-yacht to use at Bremerholm can be used there when its timbers are slightly altered and made such that four regiment pieces can be used upon it.<sup>30</sup>

From 1644 jagts were classified together with the oared galleys, although many of these were undoubtedly the small one-masted sailing ships that are more normally associated with the term yacht. However, it is impossible to differentiate which ships were row-yachts and which were sailing yachts and so all jagts have been included in the list given in Appendix 1. The laxity in terminology further complicates matters as included in the classification were some ships, such as *Dynkerker Bojert* and *Hollands Fregat*, which were clearly neither galleys nor jagts.

There was also a still smaller type of oared vessel called a *skærbåd* (skerry-boat) or a *skyttebåd* (cannon-boat). Some were built around 12–15m long that carried a few small cannon,<sup>31</sup> though many of them were so small that they did not even merit names and were probably little more than armed rowing dinghies. When the fleet sailed in 1643 behind each of the 13 ships was to be towed a 'Roerss bade' (Row boat), each manned with five men.<sup>32</sup> It is likely that these were some kind of *skærbåd*.

<sup>27</sup> *Kancelliets Brevbøger*, 16 March 1631.

<sup>28</sup> Ship list, 6 December 1635, *egenhændige Breve*, III, 451–2.

<sup>29</sup> Claus Daa complained in 1619 that no shipbuilders could be found in Trondheim *len* who could build carvel ships. (Olav Bergersen, *Fra Henrik Bielke til Iver Huitfeldt*, (Oslo, 1953), I, 32.)

<sup>30</sup> Letter to Christian Friis & Klavs Daa, 3 June 1635, *egenhændige Breve*, III, 393.

<sup>31</sup> Hauge, 'Galeier i den dansk-norske marine', 353.

<sup>32</sup> Letter to Corfitz Ulfeldt, 25 January 1643, *egenhændige Breve*, V, 292.

The list of galleys and jagts in Appendix 1 includes only those that have been identified with names. There were actually very many more, and the reason that so few appear between 1600–1625 is probably more to do with the fact that so few dockyard accounts exist for these years than anything else.<sup>33</sup> Contracts exist for the building of galleys in these years but their identification is uncertain. An indication of their number can be gained by the fact that 21 galleys were ordered to be built in Norway in 1618 and in 1624 a total of 38 were said to have been mustered.<sup>34</sup>

In order to transport the vast amounts of materials and victuals needed to man and maintain the navy it kept a certain number of its own cargo ships. These ships could also be enlisted as troop transporters if the need arose. Their number generally fluctuated around the ten to fifteen mark, increasing slightly towards the end of the reign. There were also some major peaks, particularly during the Kalmar War, when large numbers of prizes were taken. Most of these prizes were taken to Copenhagen in order to be sold off and although they appear in the dockyard accounts they may only have been in state ownership for a matter of weeks. Very few cargo ships were specifically built for the navy and so the types of ship used were diverse, depending on what could be bought or captured. The majority were probably of Dutch or English design, such as the *Bysse*, *Fløjte*, *Bojert*, and *Kat*, but there were two indigenous Danish cargo ship types. The *skude*, which grew out of the Viking tradition, was a small open-decked clinker-built vessel capable of carrying up to around 40 tons, while the *krejer* was a slightly larger carvel-built vessel carrying up to around 60 tons.<sup>35</sup>

The predominance of Dutch style merchant ships seems to be confirmed by the small sample of six cargo vessels dating from Christian IV's time that have been excavated in Copenhagen. Most were carvel built using the traditional Dutch shell-first method,

<sup>33</sup> Although most regionally based galleys did not appear in the accounts there would undoubtedly have been a number stationed in Copenhagen.

<sup>34</sup> Bergersen, *Fra Henrik Bielke til Iver Huitfeldt*, I, 31–2; Hauge, 'Galeier i den dansk-norske marine', 355.

<sup>35</sup> Ole Mortenson, *Renæssancens Fartøjer*, 95–110; Jørgen H. Barfod, *Danmark-norges handelsflåde 1650–1700*, (Kronborg, 1967), 90–117. The term 'skude' could also be used as a generic term for a small vessel. Ole Degn & Erik Gøbel, *Skuder og kompagnier: Dansk Søfarts Historie 2, 1588–1720*. (København, 1997), 15.

although one was a Danish-built clinker ship. One has been identified as probably the *Hollands Jeger*, which served as a royal transport from 1620–23. The excavation shows that this was a Dutch *boyer* that had been lengthened by being cut in two and a new section inserted. Another of the ships has been identified as probably one of the three Danish East India Company ships that sailed to the Indies in 1618. This vessel was originally constructed in the Netherlands and then re-built in Denmark with the addition of a reinforcing second layer of oak planks and pine sheathing.<sup>36</sup>

As well as the ships owned by the state, the Danish navy could also requisition large numbers of private cargo ships, particularly when large amounts of naval stores and victuals were needed in wartime. The navy could also make use of armed merchantmen, but as we have seen the numbers were not large due to the nature of the Danish-Norwegian merchant navy. Privateering was an option that was used, especially during the Kalmar War,<sup>37</sup> but it seems that the preferred option was for armed merchantmen to be hired in so that they came under the direct control of the state. One practical reason for this may have been that while merchant ships may have had gun-carrying capabilities they actually carried few, in any, cannon or personnel trained to fire them. These therefore needed to be supplied by the state. To counter this problem Christian IV attempted to stimulate the building of suitable vessels by offering certain incentives and privileges. In Norway these ships were called *defensionskibe* (defence ships). The idea for them was first suggested at a meeting of the Norwegian estates general in 1628, presumably after all the coastal defence galleys had been called to Copenhagen. Christian IV was not initially very enthusiastic, but he soon changed his mind. In 1630 he directed that a total of 21 defence ships of at least 120 lasts were to be built. A plan was drawn up by David Balfour based on the Dutch *fluit* that incorporated a large cargo hold and a gun deck with 22 cannon ports. In practice, though, most of the armed

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<sup>36</sup> Christian P. P. Lemée, *The Renaissance Shipwrecks from Christianshavn/Copenhagen, Ships and Boats of the North*, 6, (Roskilde, 2006). Some of the vessels were deliberately scuttled to create a careening wharf, while others sank by accident. I am indebted to the author for supplying an advance draft of this work.

<sup>37</sup> During the *Kejserkrig* privateers were also authorised to sail without official letters of marque due to the desperate need to defend the islands after Jutland was occupied. Probst, *Christian 4.s flåde*, 114 & 173.

merchantmen were smaller. Christian IV's plans were to prove hopelessly optimistic and by 1640 only nine ships had been built in Norway, of which five had either been lost or captured by pirates. The defence ships had their own administration and command structure under the *Statholder* in Norway. When Hannibal Sehested was appointed to that post in 1642 he tried to reinvigorate the programme, but by 1644 there were still only six ships in operation and in order to supplement them during the Torstensson War a further eight were ordered from a Dutch merchant.<sup>38</sup>

The system in Denmark had its origins in the sixteenth century when a number of coastal towns were encouraged to maintain a number of armed merchant ships until needed for naval service, but this policy was effectively abandoned after their poor showing in the Nordic Seven Years War.<sup>39</sup> Christian IV resurrected the idea again in the 1620s, prompted largely by the high freight rates for Spanish salt that would make large armed merchant ships profitable, thereby stimulating the economy and providing a reserve of ships for the nation's defence. In return for a monopoly of salt imports a number of towns were encouraged to establish 'Spanish Companies' and build ships of 100 lasts. This had limited success and the scheme was soon withdrawn. In the 1630s he returned to the idea and offered incentives to 'the richest and most distinguished burghers' to operate armed merchant ships of at least 120 lasts.<sup>40</sup> These ships were known as *borgerskibe* (burgher ships), although they were sometimes also referred to as *defensionskibe*. They had no formal organisational structure. One missive for 1636 merely stated that in return for privileges the ship owners should carry out their own trade with the armed ships, keep a crew of trained seamen and hand over control to the king, if necessary, in times of war.<sup>41</sup>

It is impossible to determine quite how many armed merchantmen were available except for when they were required in the Torstensson War. In 1645 a survey of merchant ships in Copenhagen revealed that a total of 18 were able to carry cannon and suitable

<sup>38</sup> Ole Henrik Gjeruldsen, *Defensjonsskipsordningen i Norge 1630–1704*, (Oslo, 2002).

<sup>39</sup> H. D. Lind, *Fra Kong Frederik den andens tid: Bidrag til den dansk-norske sømagts historie 1559–1588*, (København, 1902), 6–7, 26, 36, 116 & 127.

<sup>40</sup> Probst, *Christian 4.s flåde*, 40.

<sup>41</sup> Bergersen, *Fra Henrik Bielke til Iver Huitfeldt*, I, 41–2.

to join the navy.<sup>42</sup> During the war a total of 30 armed merchantmen, including the Norwegian *defensionskibe*, were hired by the navy. Their size varied from six to 30 guns and they were used for a variety of purposes from convoy protection to fighting alongside the main fleet in battle.

### *The Operational Strength of the Navy*

The ship list developed in Appendix 1 allows us build up a picture of the overall strength of the navy during Christian IV's reign, shown in Figure 3. The true strength is distorted to some extent by the availability of information. In many cases we do not know when a ship entered or left service and these are counted simply from when first mentioned until last mentioned, and for many ships this amounts to just one year. To some extent these figures therefore represent a slight underestimate.<sup>43</sup> The period where the greatest error is likely is from 1600–1620 when there are very few dockyard accounts. The apparent decline in the navy from around 1600 probably reflects an absence of accounts rather than a true drop in the size of the fleet, and it would be reasonable to assume that the number of ships from 1600–1620 was slightly higher than shown.

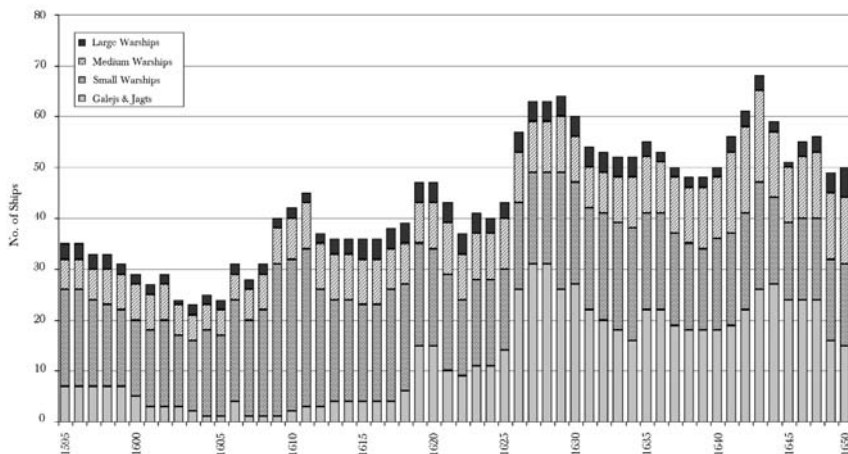
Taking into consideration the patchy nature of information, the number of ships in the sailing navy seems to have remained fairly steady. In the period before the Kalmar War there were between 20 to 30 ships, while after the war there were between 30 and 35. Occasionally the number rose above or dipped below these levels, particularly in times of conflict, but never for more than a year or so.

The number of large warships was never very great. The number initially dropped from three at the start of the reign to just one in 1603 as the older ships from Frederik II's time were withdrawn. Their number slowly rose to a fairly steady level of four from the late 1610s through to the early 1630s, before falling again to just two or three in the late 1630s. The 1640s brought an upsurge in

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<sup>42</sup> Holck, 'Flaadelister omkring Krigsaarene 1644–45', 547–8.

<sup>43</sup> For example the small spike in 1607 represents the survival of two dockyard account books for that year.

Fig. 3. *Total Number of Ships in the Danish Navy*

the building of larger ships. This may have been in response to the building of other capital ships in Europe in the late 1630s, such as *La Couronne* (1636) in France and *The Sovereign of the Seas* (1637) in England, although the growing size of Sweden's ships would have provided a more immediate concern. After the Torstensson War the navy was left with just one large warship. Following this defeat there was a review of naval tactics.<sup>44</sup> Two new large warships, *Hannibal* and *Victoria*, were ordered immediately and the remaining ships in the navy were steadily rebuilt, increasing their cannon carrying capacity by as much as 50 percent.<sup>45</sup> There was certainly an element of restoring lost pride here, particularly with the new ships, but they are also a reflection of the technical developments in shipbuilding that enabled larger ships to sail more effectively. A further three large ships were ordered in 1647. These ships, *Sophie Amalie*, *Frederik*, and *Prins Christian* were the largest built for the navy since *Fortuna* and *Tre kroner*, but although ordered by Christian IV, they did not actually appear in the navy until after his death.

<sup>44</sup> Niels M. Probst, 'Slaget i Femern Bælt 13. oktober 1644', *Marinehistorisk Tidsskrift*, 2/1986, 17–8.

<sup>45</sup> Niels M. Probst, 'Snarens vend, et orlogskib fra Christian IV's tid', *Marinehistorisk Tidsskrift*, 1/1987, 11–15.

The number of medium sized vessels increased steadily. From the start of the reign through to 1610 there were between five and seven, in the following two decades their number fluctuated between eight and ten. There was a slight dip after 1630, but then the number rose to a peak of 18 at the start of the Torstensson War, followed by the inevitable drop and then rebuilding to 13 by the end of the reign.

There is a much larger fluctuation in the number of small warships, reflecting the fact that these tended to drift in and out of the navy far more frequently than larger vessels due to the nature of their construction and their method of acquisition. Most warship prizes came in this category so we see large peaks, for example, during the Kalmar War and following the 1630 attack on Hamburg. If we ignore these peaks, the number of small warships varies between 15 to 20 during most of the reign, although there was a slight increase during the *Kejserkrig* and the early 1630s reflecting the predominant operational needs at that time for coastal defence and enforcing toll collection on the Elbe.

The number of galleys and jagts fluctuates more than any other class of ship. This is partly because they are smaller, but it also reflects the fact that many galleys were maintained at regional bases and did not therefore appear in the central dockyard accounts. The sudden increase from 1627 reflects the arrival of the regional galleys in Copenhagen. These figures therefore represent the main fleet based in Copenhagen, with the majority of small coastal protection vessels dotted around the realm not accounted for.<sup>46</sup>

If we look at the displacement figures in Figure 4 we can see that the overall size of the navy initially fell and then rapidly increased up to around 1613. It then increased more slowly to around 20,000 tonnes in 1620. The navy then stayed around this mark until 1640, with some admittedly major fluctuations. The sudden drop in 1625 reflects the sinking of *Tre kroner* as a blockship in Copenhagen harbour, while the peak in 1630 largely represents six small warships that were ordered during the *Kejserkrig* coming into service. From 1640 there is another sharp increase as a number of medium warships came into service, followed by a catastrophic decline after the

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<sup>46</sup> Probst has identified a number of regional vessels through the *len* accounts but their number still remains small.



Fig. 4. *Total Displacement of the Danish Navy (including galleys & jagts)*

Torstensson War. The steep increase after 1645 is largely accounted for by the five new large warships that were ordered after the war.

The cannon carrying capacity of the navy, shown in Figure 5, follows a similar trend, but indicates a steadier increase over the reign. The number of cannon had effectively doubled by 1630 and rose further to a peak in 1643.<sup>47</sup> This is followed by the expected dip after the defeat at Femern and then a rapid rise again with the rebuilding programme.

This quantitative analysis contradicts many assumptions that have previously been made about the navy. The lack of serious scholarly research on the early modern Danish navy has meant that many historians have had to rely on the works of Garde and Lind and they have consequently drawn conclusions that no longer stand up to scrutiny. For example the navy was not nearly as weak after the minority as was formerly thought and therefore the new-building

<sup>47</sup> The cannon carrying capacity is calculated on the maximum number of cannon carried by a ship, or the number of cannon ports. What is shown is therefore the potential cannon carrying capacity of the fleet and does not take into consideration the number of cannon actually available or issued to the fleet. The number of cannon carried by many of the smaller warships is unknown. These figures should not therefore be taken as an accurate indication of actual firepower. They are given purely to show the trend.

Fig. 5. *Total Cannon Carrying Capacity of the Danish Navy*

programme instituted by Christian IV, although still very impressive, was certainly not as dramatic as some have assumed.<sup>48</sup> The navy certainly did not double in size between Christian IV's accession and the Kalmar War.<sup>49</sup> As far as the available sources allow us to make any firm conclusions about the period before the *Kejserkrig*, the navy seems to have been a fairly stable force in terms of numbers of ships. The overall displacement did increase as smaller older ships were replaced with larger ones, but the immediate impact of Christian IV on the size of the navy has certainly been over-estimated. His impact can therefore be seen to be in modernising the navy rather than in massively expanding it.

The situation in the 1630s is also very interesting. Many historians have taken as an accepted truth that there was a naval expansion in this decade, but the present research contradicts this completely. There was indeed a significant increase in the size of the navy towards the end of the *Kejserkrig*, but this was created largely by the arrival of the regional galley fleet in Copenhagen. Thereafter, the number of ships, the overall displacement and the cannon capacity all fell

<sup>48</sup> H. G. Garde, *Den dansk-norske sømagts historie*, (København, 1861), 107.

<sup>49</sup> Leo Tandrup, *Mod triumf eller tragedie*, (Aarhus, 1979), I, 74.

over the course of the 1630s. The financial and political crisis following the war was a key factor here, as was the loss of the two principal shipwrights Balfour and Sinclair. New ships were being built but not nearly on the same scale as before. In the 1620s 19 warships were added to the fleet, followed by a further seven in 1630. During the rest of the 1630s only eight warships were added. At the same time many ships were being discarded. This was probably much more influenced by practical rather than political motives. The expected life of a ship made from Baltic oak at this time was only around 30 years and so ships built at the start of the reign were beginning to reach the end of their useful lives.<sup>50</sup> Some newer ships were also wrecked.

What does not show up on the graph is the number of ships actually in commission, since a large number of the ships listed could be laid up over a long period. Older ships that had been converted into harbour block ships also continue to appear in the lists after they are no longer fit to put to sea. The letters of Christian IV indicate that the main sailing fleet consisted on average of about 20 ships in peacetime. The victualling accounts show that many of the ships listed received no stores, or were only issued with candles for the ship keepers and salt to keep the pumps working in winter. The accounts for 1642/43 show that of the 77 warships and transports listed 23 were laid up for the whole year, and many of the others were mobilised for only a few weeks.<sup>51</sup> This does not quite equate with Christian IV's assertion that only 18 warships were needed that year but it does highlight the difficulty in assessing the Navy's true strength at any one time.<sup>52</sup> Thus Figure 3 really shows the potential number of ships able to be mobilised rather than the actual operational strength of the navy.

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<sup>50</sup> R. G. Albion, *Forests and Sea Power*, (Hamden, Conn., 1965), 17–23; Fynes Moryson noted in 1593 that Danish ships were similar to English, 'saue that they last not so long by tenne years at the least' and that 'their Shipps built of the Oaks in Norway last not aboue twenty yeares'. Fynes Moryson, *The fourth Part of an Itinerary*, f. 242–3.

<sup>51</sup> Rigsarkiv, Marinearkivet for 1655, 14. Bremerholms Proviantskrivets Regnskab 1642/43.

<sup>52</sup> Letter to Corfitz Ulfeldt, 17 May 1642, *egehændige Breve*, VIII, 173–4.

*The Symbolic Strength of the Navy*

As well as the actual physical strength of the navy, Christian IV was also very interested in its symbolic strength. On occasions such as the 1606 visit to England and the 1634 wedding celebrations it was the psychological impact of the navy, rather than its fighting strength, that was most important.

The symbolic strength of the navy is clearly demonstrated in the names given to ships. The formal process for naming ships is not known but from the surviving evidence we do know that Christian IV played a major part in their selection. The navy's role in protecting Christian IV's territory is reflected in the large number of names associated with heraldic representations of various parts of his empire. Denmark itself is represented by *Tre Løver* (3 Lions); Iceland by *Kronet Fisk* (the Crowned Fish) and *Falken* (the Falcon); Greenland by *Hvide Bjorn* (White Bear); Gotland by *Lammet* (the Lamb); the Faeroes by *Flyvende Vædder* (Flying Ram); Holstein by *Nelleblad* (the Nettle Leaf); Schleswig by *To Løver* (2 Lions); Dithmarschen by *Sorte Rytter* (Black Knight); Stormarn by *Svanen* (the Swan); Øsel by *Ørnen* (the Eagle); Bornholm by *Dragen* (the Dragon); and the Wendish lands by *Lindormen* (the Wyvern).<sup>53</sup>

Greek and Roman gods and warriors such as Neptune, Hercules and Hector were used to reinforce the image of Christian IV as a powerful monarch in the classical tradition, but figures from Nordic mythology are strangely absent.<sup>54</sup> Religious names also appear less frequently than might be expected from a monarch who set himself up as the leader of the Protestant alliance, but the *Trefoldighed* (Trinity), *Penitens* (Penitence) and various angels, saints, and figures from the bible all served to project an image of piety.

Animal names, apart from those associated with Denmark's empire, were also very popular. The mythical *Pelican*, which pecked its breast to feed its young, was used frequently as a symbol of Christian IV's sacrifices to his people, and appeared regularly as a ship name. Other

<sup>53</sup> R. Steen Steensen, 'Det danske Rigsvaaben og Flaadens gamle Skibsnavne', *Tidsskrift for Søvesen*, (1949), 169–86.

<sup>54</sup> Scenes from Nordic mythology formed an important part of the festivities at the royal wedding in 1634 and featured in the decoration of Kronborg Castle after it was rebuilt in the 1630s. H. D. Schepelen and Ulla Houkjær, *The Kronborg Series: King Christian IV and his Pictures of Early Danish History*, (København, 1988).

less symbolic animals were either sea creatures such as *Hummeren* (the Lobster), *Krabben* (the Crab) or *Havhesten* (the Seahorse), or else they were animals that were powerful, fast or skilful. In this category come *Hanen* (the Cock), *Leoparden* (the Leopard), *Mynden* (the Greyhound), and the *Røde Ræv* (Red Fox).

Some names also served a symbolic role in terms of domestic politics. For example *Store Sophia* was named in honour of his mother at a time when he was trying to get his hands on her fortune and *Hannibal* was named after his son-in-law and political ally, Hannibal Sehested.<sup>55</sup> The names of some ships were symbolic on a much more personal level, such as *Trost*, which was named after his favourite dog and *Stumpet Dorette* which was named after Kirsten Munk's daughter by another man, Dorothea Elisabeth, whom Christian IV referred to as 'Din stumpe Dorothea' (your stumpy Dorothea).<sup>56</sup>

The decoration of the larger ships also served as a demonstration of symbolic strength, as illustrated by the descriptions of *Tre kroner* in 1606. As well as marvelling at her sheer size and firepower the commentators all noted the elaborate decoration. One remarked that 'her poope, her forecastle and Beake-head, were all fayre carued and richly guilt, so were the port-holes for her peeces, her tops, top-masts & other places'. Another highlighted that her waist and half-deck were 'adorned with arras and other rich ornaments'.<sup>57</sup>

These decorations were not just made by the dockyard craftsmen but were the work of the finest court painters and carvers. All of the larger vessels in the navy had similarly richly carved and decorated beak-heads, quarter galleries and sterns. These were all gilded and painted with the stern also being used to carry a large painted representation of the ship's name, so for example *Norske Love* had a large lion on its stern, while *Sorte Rytter* had a knight on horseback. An insight into the decoration of Christian IV's ships can be seen in the painter's account for his work on *Trefoldighed* prior to the king taking command of it in 1644. On the stern panel was a representation of the baptism of Christ, painted in oils. Underneath, the ship's name was picked out in gold. The figurehead, side gallery

<sup>55</sup> When he fell from favour in the 1650s the ship was re-named *Svanen*.

<sup>56</sup> P. Holck, 'Gamle Skibsnavne', *Tidsskrift for Søvesen*, (1941), 378–80.

<sup>57</sup> *The King of Denmarkes Welcome*, Printed by Edward Allde, 1606, British Museum, 1093. b. 71; Howes account, Reprinted in Nichols, *Progresses of James I*, II, 89.

carvings and the mast tops were all painted and gilded, and the insides of the gun ports were painted red with a white cross. Inside the king's quarters the doors and panelling were all painted and gilded with various motifs, including the king's arms, and the interiors of the cabins were decorated with numerous paintings. This was clearly a ship whose decoration was designed to impress and which would symbolise the king's power at sea.<sup>58</sup>

The symbolism of the navy could also be seen in the many nautical allegories that appeared in court pageants and in paintings that decorated the royal palaces. The most important painting relating to Danish sea power was Isaac Isaacs's *Allegory of the Sound*, painted for Christian IV in 1622 (Plate 4).<sup>59</sup> This was a highly charged painting full of symbolism that, as well as appealing to his own vanity, would have been used to impress upon any foreign guests that Denmark's sovereignty over the Sound was absolute and inviolable.

### *The Danish Navy in a European Context*

In order to establish the international significance of the Danish navy it is necessary to see how it compares with the other maritime powers in Europe. The countries that provide the most useful comparison are Sweden, England and France since their navies, like Denmark's, were largely composed of state-owned sailing warships. The large Dutch and Spanish navies included a number of private vessels, either hired on a short-term basis during times of crisis or contracted over longer periods. They also included large numbers of state-owned vessels and were probably the largest navies for much of this period, but the current level of knowledge of these two navies at this time does not allow for any meaningful comparison. The comparative figures for the four navies are shown in Figure 6 for the number of ships and Figure 7 for their displacement.<sup>60</sup>

<sup>58</sup> The account is published in Jørgen Olrik, 'Trefoldigheden's dekorering for Christian IV's orlogsfærd 1644', *Fra Arkiv og Museum*, (1905), 407–9. Details of one ship painter can be found in Niels M. Probst, 'Villum Horbolt, Hoffets og Holmens Maler', *Marinehistorisk Tidsskrift*, 4/1944, 93–104.

<sup>59</sup> On display at Kronborg Castle.

<sup>60</sup> Ships under 100 tonnes displacement, galleys and any privately owned vessels are excluded from these figures, in line with Jan Glete's methodology in *Navies and Nations*.

Fig. 6. *Comparison of Numbers of Ships for Denmark, Sweden, England and France*

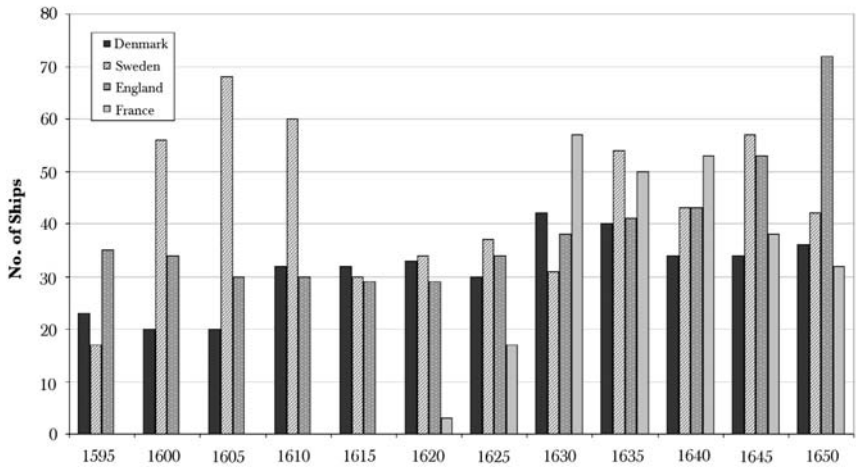
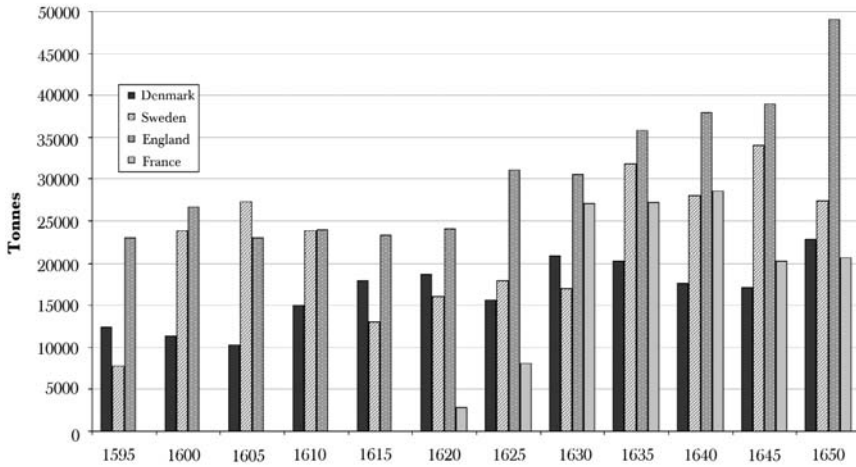


Fig. 7. *Comparison of Naval Displacement for Denmark, Sweden, England and France*



Sweden is the obvious starting point for any comparison. Like Denmark, Sweden had only a small merchant fleet and so the navy was almost entirely state-owned. The two countries also competed with each other for naval supremacy in the Baltic and effectively closed out any other competitors. An analysis of the two navies was made by Jan Glete in *Navies and Nations*, but new research on both the Danish and Swedish navies allows us to re-assess the situation.<sup>61</sup> The major differences from the previously published figures are that the Danish navy can now be seen to be slightly larger than previously thought in the period from 1595 to 1625 but slightly smaller in 1640 and 1650. The Swedish navy is now known to have been smaller in 1595 and 1625, but for the rest of the period the figures remain fairly consistent, with only minor variations. The revised data on the two navies is given in Appendix 2.

These new figures suggest that Denmark held considerable naval superiority in 1595. However the picture is far from clear. Swedish figures are especially uncertain for 1595 due to the power struggle between King Sigismund and Duke Karl. In addition to those ships listed in the naval archives it is probable that Sigismund had a few Swedish ships in Danzig, the *riksadmiral*, Klas Fleming, controlled a number of ships in Finland, the Dowager Queen Gunilla owned a ship and Duke Karl had at least 16 merchant ships, most of which were armed. The number of Swedish warships in 1595 may therefore have been as large, or even larger, than Denmark's navy, but they were not under unified control.<sup>62</sup>

The civil war led to an explosion in shipbuilding in Sweden, resulting in the apparent massive Swedish superiority from 1600 to 1610. Danish naval superiority in the Kalmar War was certainly not a foregone conclusion. As well as having large numbers of small vessels Sweden also had a battle fleet of approximately the same size as Denmark. The decisive factor in 1611 was that Denmark successfully mobilised her fleet for war while many of the Swedish ships remained in port due to a lack of materials, poor administration and Karl IX's belief that Denmark would not attack. As the smaller ships went out of service the Swedish navy returned to more normal proportions and from 1615 through to 1630 the two navies were fairly evenly matched.

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<sup>61</sup> I am indebted to Jan Glete for supplying updated figures for the Swedish navy.

<sup>62</sup> Personal correspondence with Jan Glete.



The situation changed dramatically in the 1630s. Denmark was going through something of a decline while Sweden dramatically increased her naval strength to support the lines of communication between Sweden and the continent during her involvement in the Thirty Years War. This expansion was achieved through a major shipbuilding programme and the capture of the nascent Habsburg fleet at Wismar in 1632.<sup>63</sup> The significant Danish expansion in the early 1640s does not show up on the graph and the massive imbalance in 1645 represents the capture of so many Danish ships by the Swedes at Femern the year before. The more equal figures for 1650 shows a return to the tendency for the two navies to achieve a fairly even balance.

The English figures show a decline after the accession of James VI and I, followed by a dramatic increase from the 1630s and 1640s showing the success of the ship money fleets and the Commonwealth naval administration. England consistently had a high proportion of large ships, reflecting both the English defence strategy of meeting the enemy in force on the high seas, and a heavy reliance on privateers and armed merchantmen, which meant that there was less need for the state to keep large numbers of small ships or galleys.<sup>64</sup> The French figures show the creation and rapid expansion of a largely state-owned Atlantic fleet by Richelieu, followed by a period of decline after his death. The French navy was at first made up of smaller ships, but these were soon replaced with larger warships in the 1630s.<sup>65</sup>

No navy had a stable size. This represents the powerful opposing influences of war and finance on state navies. There is therefore an inevitable fluctuation in relative naval strengths between countries as they drift in and out of war. In terms of numbers of ships Denmark had overtaken England by 1610 and maintained that numerical superiority until around 1630. However, the English ships were larger and although the overall displacement of the Danish navy approached

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<sup>63</sup> Glete, *Navies and Nations*, I, 138.

<sup>64</sup> N. A. M. Rodger points out that the proportion of merchantmen to state warships fell steadily to virtually nothing in 1636, but rose again sharply with the Parliamentary fleet in 1643. N. A. M. Rodger, *The Safeguard of the Sea: A naval history of Britain, 660–1649*, (London, 1997), 484.

<sup>65</sup> The figures for England and France are taken from Jan Glete, *Navies and Nations: Warships, Navies and State Building in Europe and America, 1500–1860* (Stockholm, 1993).

that of the English in 1620 it never quite matched it. By the 1630s the Danish navy was left far behind, both in terms of numbers of ships and displacement. The French navy rapidly overtook the Danish in the 1620s and maintained that superiority until the French decline and the Danish rebuilding programme in the late 1640s.

By looking at these comparisons we can see that Denmark maintained a fairly consistent maritime strength during this period. The others all went through some kind of transition. The Swedish navy changed its character completely in the 1610s, the French navy exploded onto the scene in the 1620s, only to decline again, and the English navy went through a period of decline followed by rapid expansion from the 1630s. As a result of these fluctuations the Danish navy briefly had the largest number of ships of any state-owned navy in Europe around 1615. However, as the other maritime powers increased their strength Denmark was unable to do the same.

The reasons why the Danish state navy was initially maintained at such a high level were a direct consequence of the possession of the Sound. Firstly the fact that so many ships passed through Danish waters meant that there was little reason for a strong domestic merchant fleet to be established. This meant the burden of maintaining a navy fell almost entirely on the state. Secondly, Danish policies in the Sound were unpopular with all other maritime nations and had the combined effect of increasing the threat of foreign attack while at the same time making the possibility of an alliance virtually impossible. If Denmark were to become involved in any maritime engagement then she would have to be able to meet that threat entirely with her own state forces. The reasons for failing to increase naval strength in relation to the other powers are related to the political and financial fall-out resulting from military defeat in the *Kejserkrig*. With his personal fortune depleted and Sound toll revenues falling, the king was unable to finance the building of many new ships, and the *rigsråd* was unwilling to grant the necessary finance. Christian IV did attempt to increase naval strength in the 1630s through promoting the building of private armed merchantmen and by ordering ships on credit or through the Norwegian *lensmænd*, but these measures had only limited success and were certainly no substitute for the heavy investment in large warships that was happening in Sweden, England and France. Even after the defeat in the Torstensson War the *rigsråd* would not sanction any substantial increase in naval expenditure. Of the five large warships ordered by Christian IV after

the war, two were built on credit and the other three were built using Norwegian *len* revenues.

In many ways this analysis demonstrates how much the Danish navy was really Christian IV's navy. In the early years of his reign his personal fortune allowed him to rebuild and expand the navy to reflect his own personal ambitions and prestige, but when the money ran out the state, in the form of the *rigsråd*, was unwilling to step in and finance any further expansion. As the other maritime powers expanded rapidly in the 1630s and 1640s Denmark was left behind. The character of the other navies was also changing, becoming much more 'modern' in terms of funding and administration. The Danish navy, in contrast, was still essentially operating as the personal navy of a self-styled renaissance prince. This was remarkably effective in matching the naval strength of other powers at first, but by the 1640s it had reached its limit.



## CHAPTER SIX

### THE DEVELOPMENT OF THE NAVAL DOCKYARDS

In parallel with the growth of Denmark's naval strength Christian IV also recognised the need to have an adequate infrastructure. As the navy grew he made sure that shore facilities were also developed to cope with the ever-increasing workload of building and maintaining his new ships. Copenhagen was naturally the main base for the navy, but significant developments were also made on a small island in the south of Denmark to exploit local resources, and at Glückstadt on the Elbe to service the permanent squadron on the river. There were also a number of much smaller bases dotted around the country for coastal defence. For the purposes of this study a naval dockyard is defined as a permanent base where naval ships could be built, repaired and stationed all year round. This excludes the small temporary shipyards which sprang up all over the realm to exploit specific areas of woodland, and all the numerous seasonal operational bases, stretching from Øsel and Bornholm in the Baltic up to the north of Norway, where there were little, if any, shore facilities.

#### *The Development of Copenhagen*

Ever since Erik of Pomerania created the foundations of the Danish national fleet in the early fifteenth century Copenhagen had been an important naval base.<sup>1</sup> In its early form the navy was essentially a royal possession, and it was natural for it to be based at the centre of royal power, and at the heart of the then Danish realm. Its location made it equally easy for ships to reach the Baltic and the North Sea, and it was ideally placed for policing the Sound. The geography of Copenhagen and the island of Amager also created a

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<sup>1</sup> Jørgen H. Barfod, *Flådens fødsel*, (København, 1990), 21–33.

natural harbour which could be easily defended, and its latitude ensured that, compared to Swedish ports, it remained relatively ice free for much of the year.

King Hans was apparently the first to create a naval shipyard in Copenhagen, in the early sixteenth century, but this could only have been an area of rough ground which was set aside for the purpose, and certainly had no great infrastructure associated with it.<sup>2</sup> Christian III more than ever built his navy's ships in Copenhagen and built a small arsenal and a few other small buildings associated with the navy,<sup>3</sup> but it was Frederik II who really began the process of creating a formal naval dockyard on the area known as Bremerholm.

The term 'Holmen' had been in use since 1460, but this most likely referred to Slotsholmen, where ships were built at the back of Copenhagen Castle.<sup>4</sup> Bremerholm was also used to some extent in the sixteenth century, but the only physical structures that were present appear to have been a small smithy where the workers tools were fabricated and repaired, and possibly a few other small buildings.<sup>5</sup> Off the coast of Bremerholm, in the area known as Krabbeløkke, an anchorage had also been created where ships could be laid up over the winter or when not in service.<sup>6</sup>

When Frederik II was crowned he immediately demonstrated his strong interests in maritime commerce and naval warfare. One of the first things he did, in 1559, was to mark all the harbours of the realm with lights and buoys, and publish a chart that marked all the areas to which he claimed sovereignty. He also established the *Søret* that created for the first time a maritime law for Danish waters. At the same time he also began to establish the physical structures that would create a permanent dockyard at Bremerholm. He first constructed a building in 1560 for naval stores and the accommodation of ship carpenters. A new forge was built in 1563, and there then followed a ropewalk, a sail-making workshop, kitchens, and a

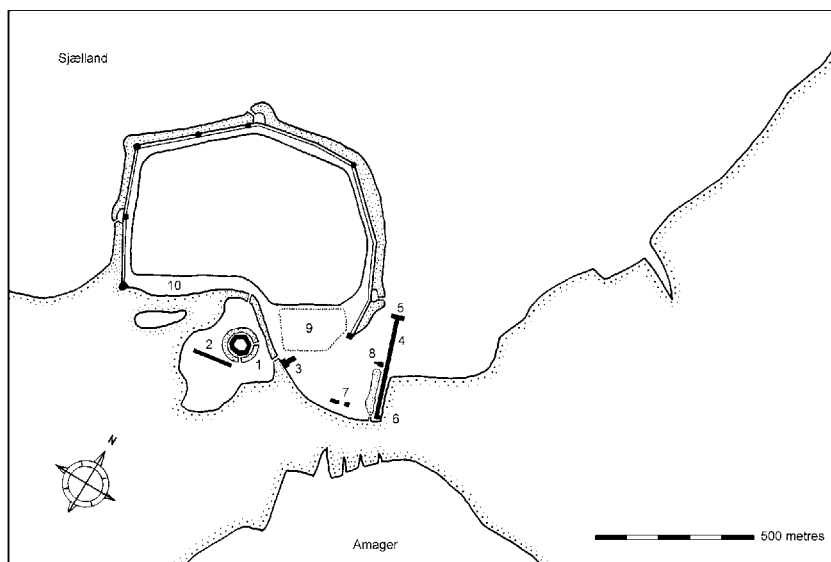
<sup>2</sup> Barfod, *Flådens fødsel*, 122–5.

<sup>3</sup> Sven Cedergreen Bech, *Danmarks historie* (København, 1963), 6, 265–6.

<sup>4</sup> Barfod, *Flådens fødsel*, 42–3.

<sup>5</sup> H. D. Lind, *Fra Kong Frederik den andens tid: Bidrag til den dansk-norske sømagts historie 1559–1588* (København, 1902), 185.

<sup>6</sup> H. D. Lind, 'Om Kong Christian den Fjerdes Orlogsflaade, I. Flaadens leie', *Tidsskrift for Søvesen*, (1890), 321–2.

Fig. 8. *Copenhagen in 1596*

1. Copenhagen Castle (15thC); 2. arsenal (1550s); 3. forge (1562); 4. ropewalk (1565); 5. sail-making workshop (1579); 6. blockhouse (1576); 7. dockyard workshops; 8. dockyard kitchens and naval barracks; 9. admiralgård farmland; 10. commercial harbour.

defensive blockhouse.<sup>7</sup> The boundaries of Bremerholm were also defined and gates were erected to restrict access. Outside Bremerholm he created a victualling store and powder mills. There was also an area set aside known as the *Admiralgård*, where the *rigsadmiral* had his residence, but also, more importantly, acted as a small farm for the supply of fresh produce to the navy's personnel. Although these developments were all fairly small-scale they were a major improvement on anything that had previously existed, and laid the foundations of the future developments which Christian IV was to institute. The layout of Copenhagen in 1596 is shown in Figure 8.

Almost immediately after Christian IV assumed power he set about redeveloping the town and harbour of Copenhagen. His first major project was an impressive new fortified harbour on Slotsholmen. This

<sup>7</sup> Jørgen H. Barfod, *Christian 3.s flåde*, (København, 1995), 265.

incorporated a massive new arsenal, known as the *Tøjhus*, measuring 163 metres long by 23 metres wide,<sup>8</sup> a victualling store lying parallel to it of the same length but slightly narrower, and a powder store to one side. The layout created a virtually sealed harbour where ships could take on ordnance and victuals in safety, and also with a certain degree of secrecy. The buildings were begun in 1598 and completed around 1606. The harbour itself was begun in 1603 but not finally completed until 1614. It was excavated to a depth of 14 feet and allowed access to vessels of up to 1000 tons.<sup>9</sup> Inside the harbour complex there were also bays set aside for boat building, reminiscent of the layout of the Venetian arsenal. The architect of the harbour development is unknown but it is thought that Christian IV himself had a hand in its design.<sup>10</sup> Shortly after it was completed he had a fanciful statue erected outside its entrance in the form of Leda and the Swan sitting on a tall pillar, which acted as a seamark. In parallel with this development he set about replacing the existing town walls, which had changed little since medieval times. The work was begun in 1606 to a design that was heavily influenced by Dutch models. By 1608 the new harbour complex was therefore also provided with a defensive wall along its western flank.

New accommodation for about 120 naval personnel of all ranks, from captains down to ordinary seamen, was provided in 1614 on what had previously been the *Admiralgaard*.<sup>11</sup> This area, known as *Skipperboder*, provided the men with good housing, but also enabled their superiors to keep a watchful eye on them. The district came under the direct jurisdiction of the naval, rather than the civic authorities, and strict discipline was expected to be kept there. At the same time a new and much larger *Admiralgaard* was laid out to the north of Bremerholm. The rapid development of Copenhagen can be seen in Figure 9.

The next phase in the development of Copenhagen was the construction of the fortified town of Christianshavn on reclaimed land

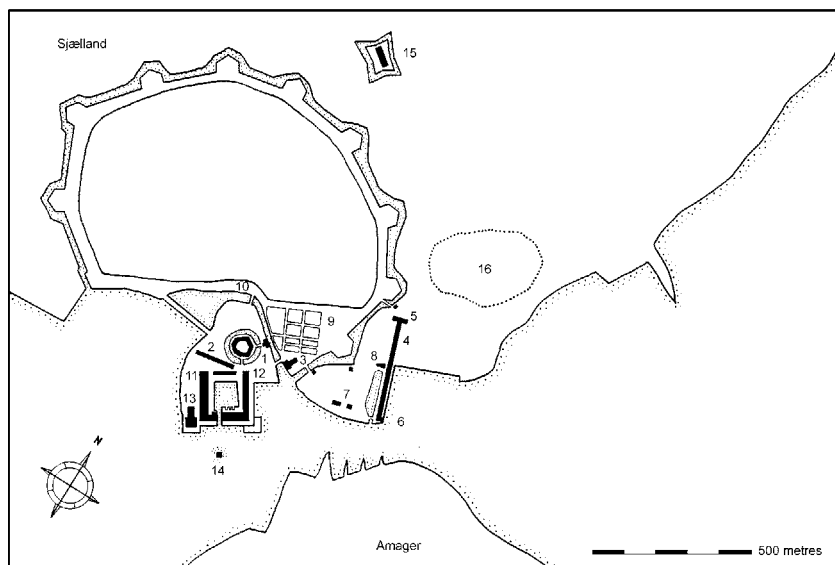
<sup>8</sup> Joakim Skovgaard, *A King's Architecture, Christian IV and his buildings*, (London, 1973), 39.

<sup>9</sup> Lind, 'Christian den Fjerdes Orlogsflaade', 317.

<sup>10</sup> Skovgaard, *A King's Architecture*, 39.

<sup>11</sup> A register from 1620 shows that a total of 120 were given housing here, divided among 1 captain, 36 skippers, 13 steersmen, 28 boatswains, 34 seamen, 4 widows and 4 other miscellaneous naval personnel. Rigsarkiv, Danske Kancelli, B164, IX, 06, læg 26.



Fig. 9. *Copenhagen in 1615*

1. Copenhagen Castle (15thC); 2. old arsenal (1550s); 3. forge (1562); 4. ropewalk (1565); 5. sail-making workshop (1579); 6. administration building (1592); 7. dockyard workshops; 8. dockyard kitchens and naval barracks; 9. skipperboder accommodation (1615); 10. commercial harbour; 11. new arsenal (1598-1604); 12. vicualling store (1602-06); 13. powder magazine (1607-08); 14. Leda and swan sea mark (1608); 15. Rosenborg palace (1606); 16. new admiralgård farmland.

on the island of Amager. It was originally planned as a garrison town and the first plans, drawn up by the Dutchman Johan Semp, were similar to that for an ideal military camp.<sup>12</sup> However, these plans were quickly modified and a contract was placed with Semp in December 1617 to create a high-class merchant town. Christianshavn was to be an autonomous town, separate from Copenhagen, with its own rights and privileges, and with its own civic administration. It proved a highly popular area for the social elite of Copenhagen and became in effect a wealthy suburb. To link Christianshavn to Copenhagen a bridge incorporating a customs house was built.

<sup>12</sup> Mogens Lebech, *Gamle skibe—gamle huse*, (København, 1959), 12; Josef W. Konvitz, *Cities and the Sea*, (Baltimore, 1978), 38.

At the same time Christian IV also set about improving the commercial harbour of Copenhagen. The existing harbour facilities, on the north bank of the water between Slotsholmen and the town, had changed little since the fifteenth century. Larger ships could not enter this harbour and had to lie in deep water and have their goods trans-shipped to smaller vessels. This was clearly no longer adequate for Christian IV's mercantile ambitions and plans were drawn up for a new commercial harbour, with an integrated bourse, by the Dutch architect Laurens van Steenwinckel. He died before work began and the contract was given to his brother, Hans van Steenwinckel the Elder, in 1619. Work was slow and hampered by the frequent interventions of Christian IV and, although much of the building was finished by 1625, it was not finally completed until 1640.<sup>13</sup> Other developments at this time included the conversion of the powder house beside the new arsenal harbour into a brewery around 1619.<sup>14</sup> This was burnt down in 1632 and rebuilt on a massive scale the following year.<sup>15</sup>

The final phase of Christian IV's development of the town of Copenhagen was begun in 1629. A plan was drawn up in 1627 to more than double the size of the existing town. This plan consisted of extending the new city fortifications further to the north and east, culminating in a massive citadel on the coast. Within these new walls the city was to be developed in a radial fan plan.<sup>16</sup> The fortifications were more or less completed by the time of his death in 1648, but of the planned new town only one small section was completed. This was the new accommodation for seamen and artisans known as Nyboder, which served as an extension to the Skipperboder. Christian IV first presented his ideas on the subject to the *rigsråd* in January 1631,<sup>17</sup> but had to battle hard to ensure that the necessary finance was forthcoming.<sup>18</sup> He took an almost obsessive interest in their con-

<sup>13</sup> Skovgaard, *A King's Architecture*, 87–91.

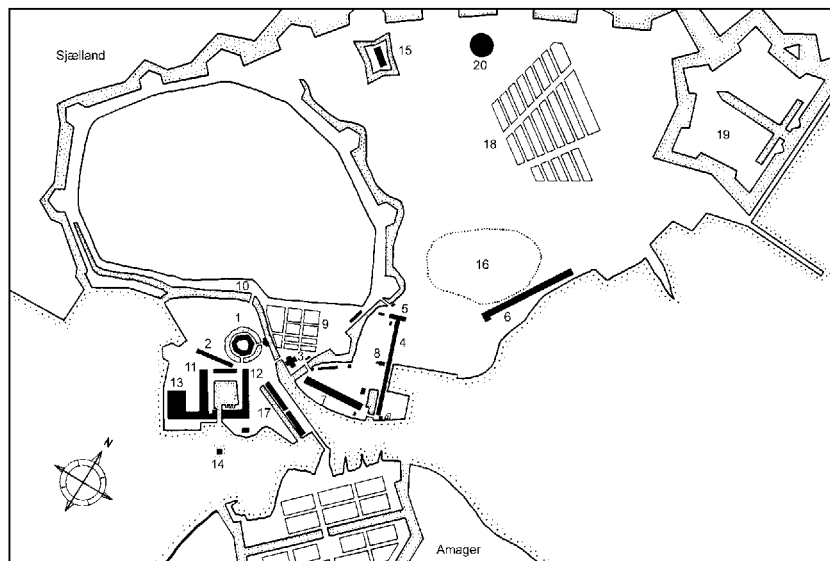
<sup>14</sup> C. F. Bricka & J. A. Fredericia (eds), *Kong Christian den Fjerdes egenhændige Breve*, I, Note, 170.

<sup>15</sup> Letter to *rigsråd*, 12 April 1633, *egenhændige Breve*, Vol. III, 103; Skovgaard, *A King's Architecture*, 39.

<sup>16</sup> Konvitz, *Cities and the Sea*, 38–44.

<sup>17</sup> Letter to *rigsråd*, 7 January 1631, *egenhændige Breve*, II, 319.

<sup>18</sup> Letters to *rigsadmiraal* Klaus Daa, 27 June 1631, and *rigsråd*, 28 July 1631, *egenhændige Breve*, II, 344 & 348.

Fig. 10. *Copenhagen in 1648*

1. Copenhagen Castle (15thC); 2. old arsenal/stables (1550s); 3. Holmens kirke (1640); 4. ropewalk (1565); 5. sail-making workshop (1579); 6. Icelandic Company ropewalk (1620); 7. new forge (1615–27); 8. dockyard kitchens and naval barracks; 9. skipperboder accommodation; 10. old commercial harbour; 11. arsenal (1598–1604); 12. vicualling store (1602–06); 13. new brewery (1633); 14. Leda and swan sea mark (1608); 15. Rosenborg palace (1606); 16. new admiralgård farmland; 17. bourse and new commercial harbour (1619–40); 18. Nyboder accommodation (1631–39); 19. Sankt Anna castle (1640s); 20. Sankt Anna church (1640).

struction and regularly went there to check up on progress.<sup>19</sup> A total of 616 new homes were provided and a church was begun close by in 1640, but was never completed due to lack of finance.<sup>20</sup> The rest of the area within the new fortifications remained largely redundant since there was neither the commercial nor demographic need for its development. What developments there were largely took the form of pleasure or market gardens. The extent of Copenhagen at the time of Christian IV's death is shown in Figure 10.

<sup>19</sup> Letter to *rentemestrene*, 26 June 1636, *egenhændige Breve*, IV, 48.

<sup>20</sup> Skovgaard, *A King's Architecture*, 83.

*The Bremerholm Dockyard*

During the initial phase of the rebuilding of Copenhagen little attention was paid to the development of the Bremerholm dockyard itself. It was even left outside of the new town defences of 1606, despite the Krabbeløkke defensive blockhouse having been replaced in 1592 with just an office building. Only minor improvements were made such as the rebuilding of the weigh-house and the main entrance-way known as Holmens Port. The shipbuilding slipways remained much as they had been, but given the shipbuilding techniques of the time there was little need for anything more sophisticated than an area of rough ground sloping towards the water.

The first major new development was the building of the Great Forge that was begun in 1615 and built over a 12-year period. It was much larger than the previous forge, measuring about 200 metres in length. It housed 18 forges, as opposed to the seven in the old building, and had a large oxen-powered hammer.<sup>21</sup> This building can be seen clearly in Allard's prospect of the city (Plate 11). The chimneys are concentrated in the centre and the arrangement of windows show that the rest of the building was used for other workshops, offices and perhaps also barrack accommodation. One contemporary plan confirms this referring to the building as 'the forge with other workshops'.<sup>22</sup> There may also have been a separate smithy for the manufacture of spikes and nails. A new *naglebod* (nail house) was built in 1608 and a *sømsmedje* (nail smithy) is mentioned in 1623 which may by this time have been incorporated within the larger forge complex.<sup>23</sup>

A temporary church for seamen and dockyard personnel had been established at Bremerholm in 1617 in 'the house in which meals are taken',<sup>24</sup> but by 1619 the old forge was converted into a permanent church known as Holmens Kirke. The original exterior was at first retained but in 1641 Christian IV ordered that it should be enlarged

<sup>21</sup> H. D. Lind, *Kong Kristian den Fjerde og hans Mænd paa Bremerholm*, (København, 1889), 358.

<sup>22</sup> Vilhelm Lorenzen, *Haandtegnede kort over København 1600–1660*, (København, 1855), plan V.

<sup>23</sup> E. Madsen, 'Bidrag til Københavns historie, særlig i Kristian IV.s tid', *Historisk Meddelelser om København*, 1 Række, 6 Bd. (1917), 606.

<sup>24</sup> H. D. Lind, 'En liden Bremerholms-Krønike 1576–1648', *Museum*, (1892), 57.

and reconstructed in the shape of a cross.<sup>25</sup> There was also a dockyard hospital that was located beside the Holmens Port, near to the new church, but this was removed from Bremerholm to a site on the old fortifications around 1628 and the old building was then used as a school.<sup>26</sup>

Other workshops and stores were also constructed in the 1620s. In 1623 a payment was made to a carpenter to erect 'a mill to prepare hemp on Bremerholm' which was located somewhere near the ropewalk.<sup>27</sup> Another building, approximately 40m long, was constructed in 1626 for the storage of oars and yards and other stores but its precise location is unknown.<sup>28</sup>

Around 1620 a prison was also constructed to house the convicts who were sentenced to hard labour at the dockyard. The wooden building, described as a 'trunk', must have been situated somewhere near the moat as prisoners are reported to have escaped by crawling down the drains and swimming away.<sup>29</sup> A second wooden prison house was built in 1635–6,<sup>30</sup> but by 1640 Christian IV ordered the building of yet another prison 'since prisoners still escape daily from the trunk'.<sup>31</sup> The new building was to be built of brick and located where it could be more closely supervised.

Apart from the construction of new buildings the other major step in the modernisation of the dockyard in the 1620s was to create a wet dock where supplies could be delivered and ships repaired away from the shipbuilding slipways. There had long been an area of water beside the rope-walk where timber was laid to be seasoned, but contemporary illustrations depict it as little more than an area of marshy waste ground and it is unlikely that vessels were able to enter it. Christian IV wanted to turn this to better use and in 1621 employed the Dutch engineer Abraham de la Haye to excavate it and create a proper wet dock 140 ells (85 m) in length.<sup>32</sup>

<sup>25</sup> Letter to Corfitz Ulfedt, 27 Feb 1641, *egenhændige Breve*, V, 26.

<sup>26</sup> Lind, *Kong Kristian og hans Mænd*, 395 & 428.

<sup>27</sup> Payment to Abraham Krug, 1 December 1623, *Rentemesterregnskaber*, quoted in note, *egenhændige Breve*, I, 326.

<sup>28</sup> Madsen, 'Bidrag til Københavns historie', 607.

<sup>29</sup> Bertha S. Phillpotts (Ed.), *The Life of Jon Olafsson*, Vol. I, (Hakluyt Society, Series II, Vol. LIII, 1923), 42–3.

<sup>30</sup> Madsen, 'Bidrag til Københavns historie', 607.

<sup>31</sup> Letter to Corfitz Ulfedt, 29 March 1640, *egenhændige Breve*, IV, 319.

<sup>32</sup> Letter to Christian Friis, 12 February 1621, *egenhændige Breve*, I, 191.

An indication of the impressive nature of these developments made to Bremerholm during this period comes from the reports of the Baron de Cormenin who visited Copenhagen in 1629.<sup>33</sup>

On entering on the right hand side outside the town is the Holm: along the quay (with a crane), is where the large vessels berth alongside the quay and are rigged. There are three large buildings, long as a mall, where cable and cordage is spun, the forge of the workmen where spikes, cross pieces for large and small anchors, and all the other equipment which is necessary for ships is made, in the third building are the wood, the stores and caulking, the masts, the sails, the yards, the flags, and the barrels; there are always a large number of workers (around 5 or 6 hundred who earn 10 *rigsdaler* a year in wages and a set of clothing and victuals) who work repairing and caulking, or by instruction on the new ships.

Cormenin further noted that before the *Kejserkrig* there had been plans to build a castle at the end of the ropewalk, and so bring the dockyard within the town defences:

Near the place where the ships are [i.e. Krabbeløkke], there is an area in the sea marked by piles that is 40 *tois* (79 metres) square, where the king planned before the war to build a castle at the mouth of the harbour, and enclose the Holm in the town.

This plan appears never to have got beyond the initial groundwork stage. The *skriverstue* office building at the end of the ropewalk was removed in 1615, probably in connection with this development but these plans were superseded by the grandiose new city fortifications begun shortly after the war. In 1609 rubble is noted as being cast into the deep at Krabbeløkke and shortly after a watch house was built on the site using a sunken ship.<sup>34</sup> A blockhouse was also created on the Amager side of the harbour entrance in 1624 that was again formed by sinking a number of ships, including *Tre kroner*, in the shallows.<sup>35</sup>

Several minor changes were made in the early 1630s, including the building of two boathouses, an enlargement of the sail-making workshop and a new entrance port for men coming in from the

<sup>33</sup> Des Hayes, *Les voyages de Monsieur Des Hayes, Baron de Covmesvin, en Dannemarc*, (1664), 226–231.

<sup>34</sup> Madsen, 'Bidrag til Københavns historie', 599.

<sup>35</sup> Lind, 'En liden Bremerholms-Krønike', 58.

newly built Nyboder houses,<sup>36</sup> but the next significant addition to the dockyard facilities was to attempt the construction of a dry-dock. The larger ships were exceedingly difficult to careen and at one stage an application was even made to the East India Company in London to use their dry-dock to get around the problem.<sup>37</sup> It would be far easier if a dry-dock could be constructed at Bremerholm. The first evidence of Christian IV's plans for such a dock comes in September 1635 when timber was sent for which could be used for the repair of ships or for 'the dock which might be established in the future at Bremerholm'.<sup>38</sup> Christian IV presented his ideas to the *rigsråd* a couple of months later:<sup>39</sup>

As the *rigsadmiral*, and all of those who serve us at sea, know, that the royal navy over time perishes altogether, unless it is maintained in good time. This can be done by no other means than the establishment of a dock in which ships can be sat, so that they can be repaired from the keel up.

The *rigsråd* granted the necessary finance and work was begun that winter.<sup>40</sup> The site for this new dry-dock was on the site of the proposed castle at the end of the ropewalk, out towards the Krabbeløkke anchorage, and work immediately started on piling the area.<sup>41</sup> This pile-work was then infilled with earth over the next few years.<sup>42</sup> Progress was slow, hampered no doubt to a large extent by the lack of a tide in the Baltic, but by 1642 Christian IV could order that:<sup>43</sup>

A large and a small crane are to be erected by the new pile-work out by the ropewalk, with which both large and small ships can be careened, so that they are not forced to the slipways, as they now are.

<sup>36</sup> Letter to *rentemestrene*, 30 August 1634, *egenhændige Breve*, III, 280; Letter to Sten Beck, 17 July 1641, *egenhændige Breve*, V, 103; Lind, 'En liden Bremerholms-Krønikke', 60.

<sup>37</sup> Draft contract with Theophilo Eaton, 1624?, *egenhændige Breve*, I, 398–9; Court Minutes of the East India Co., 22 September 1624, *Calendar of State Papers, Colonial, East Indies 1622–24*, 411.

<sup>38</sup> Instruks for Daniel Sinclair, *Kancelliets Brevbøger*, 22 September 1635.

<sup>39</sup> Letter to *rigsråd*, 1 December 1635, *egenhændige Breve*, III, 449.

<sup>40</sup> Kr. Erslev, *Aktstykker og oplysninger til rigsråad og stændermødernes historie i Kristian IV's tid*, (København, 1883–90), II, 404.

<sup>41</sup> Letter to *rigsadmiral*, 6 December 1635, *egenhændige Breve*, III, 453–4; Letter to *rentemestrene*, 27 March 1636, *egenhændige Breve*, IV, 24.

<sup>42</sup> Letter to *rentemestrene*, 16 June 1636, and to Jørgen Vind, 17 October 1640, *egenhændige Breve*, IV, 41 & 414.

<sup>43</sup> Letter to Jørgen Vind, 31 October 1642, *egenhændige Breve*, V, 260.

Dry-docks at this time were fairly rudimentary and basically consisted of an area of land where ships could be hauled up out of the water, with a gate or dam which could be built across the entrance to prevent flooding.<sup>44</sup> In Allard's prospect an area of rough ground can be seen at the end of the ropewalk, and although it hardly looks impressive it is more than likely that this was the new dry dock. The picture can be dated to between 1633 and 1640 and it may be that the dock is depicted whilst still under construction. In 1681 another unsuccessful attempt was made to build a much more advanced dry dock on this site,<sup>45</sup> which would suggest that the facility built in Christian IV's time, if it was ever finished, was indeed very primitive.

There were plans to convert the ropewalk in 1644, which would have divided it into four separate bays.<sup>46</sup> Again the king was insistent on the way this should be carried out and drew up his own plans for its conversion.<sup>47</sup> The building had already been converted in 1616–7 with the addition of an attic storey that may have been used in connection with materials storage.<sup>48</sup> Certainly in the early 1640s reference is made to the storage of timber in the ropewalk and the subdivision referred to in 1644 may have been intended for just the attic storey.<sup>49</sup> In 1640 there had been complaints about the noise of the machinery and a bell now had to be used to signal that the carriage had reached the far end of the building. Knud Klem suggests that the subdivision of the ropewalk was an attempt to reduce the noise and to provide fire protection.<sup>50</sup> He also suggests that four separate ropewalks were now installed although this is unlikely. Whatever the modification, a new rope spinner was appointed in December 1644,<sup>51</sup> but operations must have ceased not long after-

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<sup>44</sup> The only proper dry-docks in Europe at this time were in England. (Jan Glete, *Navies and Nations: Warships, Navies and State Building in Europe and America, 1500–1860*, (Stockholm, 1993), 65.)

<sup>45</sup> Ole Lisberg Jensen, 'Bremerholm eller Gammelholm', *Marinehistorisk Tidsskrift*, 3/1988, 19.

<sup>46</sup> Letter to Corfitz Ulfeldt, 28 January 1644, *egenhændige Breve*, V, 439.

<sup>47</sup> Letter to Corfitz Ulfeldt, 16 February 1644, *egenhændige Breve*, V, 448.

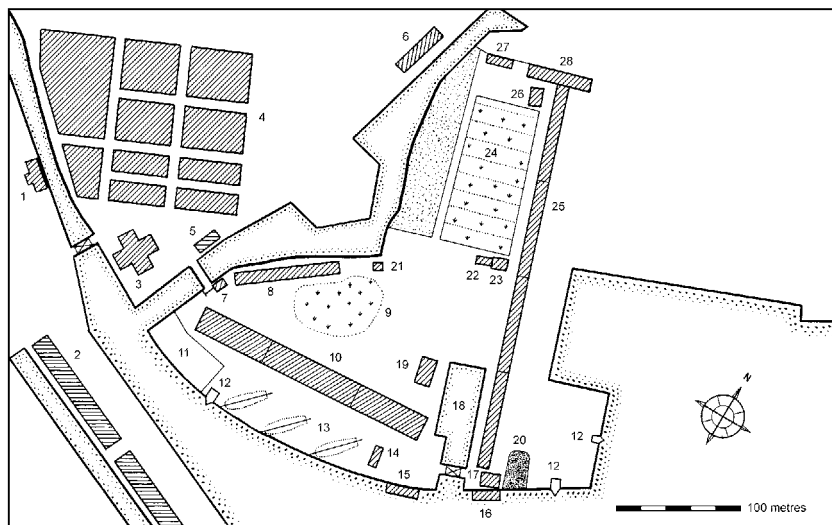
<sup>48</sup> Madsen, 'Bidrag til Københavns historie', 596–7.

<sup>49</sup> Letter to Corfitz Ulfeldt, 22 Nov 1640, *egenhændige Breve*, IV, 421, and unaddressed letter, 19 May 1642, *egenhændige Breve*, V, 213.

<sup>50</sup> Knud Klem, 'Christian IV og Bremerholm', *Handels- og Søfarts Museets Årbog*, (1977), 95–6.

<sup>51</sup> *Kancelliets Brevbøger*, 2 December 1644.



Fig. 11. *Bremerholm Dockyard in 1648*

1. Kancelli building; 2. bourse; 3. Holmens kirke (1641); 4. skipperboder accommodation (1614); 5. navigation school/parish school (1647); 6. dockyard hospital (1628); 7. Holmens port (1614); 8. main stores (1626); 9. paddock for oxen and carthorses; 10. great forge (1615–27); 11. timber wharf; 12. cranes; 13. shipbuilding slipways; 14. tackle store; 15. boat house (1634); 16. boat house (1632); 17. tar workshop (1615); 18. wet dock (1621); 19. prison trunk (1640); 20. dry-dock (1636); 21. block making workshop; 22. kitchens?; 23. barracks?; 24. vegetable garden; 25. rope walk (1565); 26. hemp mill (1623); 27. Vandport (1634); 28. sailmaking workshop, drying room and weigh house (1579/1641).

wards since in 1653 a commission investigating Bremerholm recommended that the now disused ropewalk should be put back into operation.<sup>52</sup> Where the navy obtained its cordage from in the meantime is unknown, but it is likely that the Icelandic company's ropewalk in Copenhagen provided some of the supplies, and in 1646 a merchant was granted permission to build another ropewalk on the road to Amager.<sup>53</sup> Figure 11 shows the layout of the Bremerholm Dockyard in 1648.

<sup>52</sup> H. D. Lind, *Kong Frederik den Tredjes Sømagt: Det dansk-norske søværns historie 1648–1670*, (København, 1896), 68.

<sup>53</sup> Letter to Anders Thim, *Kancelliets Brevbøger*, 27 November 1646.

*Slotø*

The first purpose built naval dockyard in Denmark was not in Copenhagen but on a small island in Nakskov Fjord, to the south of the country, which became known as Slotø. It was created by king Hans in 1509 who ordered a castle, by the name of Engelsborg, and a fortified dockyard to be built there. The construction had a unique design, incorporating a round tower and two walls that ran down to the shore forming a V shape. Within these walls were a slipway and various associated buildings and at their end was a wooden quay.<sup>54</sup> This was a natural place for Hans to have a naval dockyard since his primary seaborne enemies were Lübeck and the Hanse towns. It remained in use until midway through the sixteenth century, by which time the threat from northern Germany had been largely superseded by that of Sweden, and the castle and dockyard were abandoned.

By 1623 the plentiful woods and forests in the area had caught the eye of Christian IV.<sup>55</sup> Some of this was destined for general use at Bremerholm, but the majority of it was to be used to build a new large ship.<sup>56</sup> Rather than transport all this timber to Bremerholm Christian IV decided that it should be built somewhere in Lolland and he decided to re-open King Hans' old dockyard at Slotø.<sup>57</sup> In 1624 Daniel Sinclair was appointed as master shipwright for the yard and a small temporary forge was ordered to be erected near where the ship was to be built.<sup>58</sup> It seemed at first uncertain whether this new yard would be on the site of the old dockyard. When the idea was being investigated it was noted that 'the king has sent Steen Villumsen, Holmens admiral, to Lolland near Nakskov to select a suitable site for the building of a large ship'.<sup>59</sup> However, shortly afterwards instructions were sent to the local *lensmand* which seem to confirm that the same site was indeed used:

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<sup>54</sup> Ingolf Ericsson, 'Engelsborg på Slotø—skibsværft, fæstning og lensmandssæde fra kong Hans' tid', *Hikuin*, 14 (1988), 261–74; Barfod, *Flådens fødsel*, 121–2.

<sup>55</sup> Missive to Jørgen Grubbe, *Kancelliets Brevbøger*, 19 November 1623.

<sup>56</sup> Memorial for Daniel Sinclair, *Kancelliets Brevbøger*, 31 January 1624.

<sup>57</sup> Missive to Jørgen Grubbe, *Kancelliets Brevbøger*, 31 January 1624.

<sup>58</sup> Memorial to Daniel Sinclair, *Kancelliets Brevbøger*, 31 January 1624; Missive to Jørgen Grubbe, *Kancelliets Brevbøger*, 31 January 1624.

<sup>59</sup> Missive to Laurits & Jørgen Grubbe, *Kancelliets Brevbøger*, 10 March 1624.

He shall immediately order a house to be built by Engelsborg on Lolland that can be used by the carpenters, auger-men, sawyers and seamen, who shall work on the ship that the king has instructed to be built there.<sup>60</sup>

This document also shows that a decision had been made to establish a more permanent yard and outlines in detail all the various buildings and facilities that were needed for the small shipyard to function. In total seven separate buildings of various sizes were needed. The workers' barracks was to be 20m long and was to have two large fireplaces so that they could warm themselves in winter. A smithy was to be built with two separate forges. Beside this a three apartment building was to be built, of which two rooms were for the smith and his men to live in, and the third for their provisions. A building with four rooms was needed for the clerk, one room for his living room, one for his office and two for stores. The master shipwright also had a four-roomed house, two rooms of which were to live in, with the other two for his provisions and his instruments and tools. An eight-room building was needed for the kitchen and its stores. A separate two-room building was also needed for the storage of all the necessary spikes and treenails. It is also clear from this description that only the hull of the ship was to be built, with no provision being made for facilities for outfitting or rigging the ship.

When the site was excavated in the 1940s the foundations of two small buildings from this time were unearthed within the fortified walls. These were probably used in connection with the preparation of pitch and tar for caulking the ships, while the rest of the buildings mentioned above would have been located outside the walls. A significant amount of charcoal and soot was also unearthed on the south of the island that would suggest that the forge was located in this area, well away from the yard itself.<sup>61</sup> By 1626 a brewery had also been set up.

The accounts for the building of this ship have survived along with detailed muster lists and inventories for the yard itself that give an invaluable insight into its operation.<sup>62</sup> The number of men working

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<sup>60</sup> Missive to Jørgen Grubbe, *Kancelliets Brevbøger*, 19 March 1624.

<sup>61</sup> Marius Hansen, 'Udgravningen af Kong Hanses skibsværft Engelsborg paa Slotø i Nakskov Fjord', *Handels- og Søfartsmuseets Aarbog*, (1948), 20–57.

<sup>62</sup> Regnskaber for Skibsbyggeriet paa Slotøen ved Nakskov, Rigsarkiv, Danske kancelli, Rentekammer Udgift Conto I.d.

on the ship varied from around 100 to 130. The largest proportion of the workforce consisted of skilled wood workers, with a slightly smaller number of ordinary seamen who presumably acted as labourers during the earlier stages of construction. Some ship carpenters were recruited locally, but the majority of them were hired from Germany, the apprentices were Norwegian, while the foremen and the rest of the personnel were all Danish.

Early in 1628 Sinclair received another contract to build a further two ships at the shipyard, and as we saw in Chapter Four, although the yard remained state-owned it now began operating as a private concern, with Sinclair having to supply all the labour and materials himself. The Danish involvement in the Thirty Years War had by this time taken on a maritime dimension and the north German ports were being blockaded. The threat of a maritime invasion was in the air and rather than withdraw the whole Danish fleet to Copenhagen it was decided to experiment that year with overwintering some of the navy's ships in Nakskov Fjord.<sup>63</sup> In total six ships were to be stationed there and repaired as necessary. Two of them needed extensive repairs to their keel although it was not sure at first whether this work could successfully be carried out there.<sup>64</sup> The necessary materials for the refits as well as victuals for the men had to be sent from Copenhagen, and there was nowhere for the ships' crews at the dockyard and so they had to be billeted in local farms. However, the logic behind this experiment was sound enough since Nakskov, being much farther south than Copenhagen, would remain ice-free for a little longer than Copenhagen, allowing the ships to re-enter active service more quickly, although the arrangements do appear to have been somewhat haphazard. Six ships were again overwintered in 1630, but Slotø never became a permanent naval base.<sup>65</sup>

A fourth ship was built between 1631–1633, after which there is no further mention of shipbuilding activity in the area.<sup>66</sup> Sinclair, who was the only master shipwright to have worked there, died in 1636 but the closure of the yard was probably more to do with the

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<sup>63</sup> Missive to *Kommissarierne paa Lolland og Falster*, *Kancelliets Brevbøger*, 18 October 1628.

<sup>64</sup> Missive to Hendrik Vind, *Kancelliets Brevbøger*, 19 December 1628.

<sup>65</sup> Probst, *Christian 4.s flåde*, 198.

<sup>66</sup> Missive to Jost Frederik Pappenheim, *Kancelliets Brevbøger*, 12 April 1633.

fact that after building four warships the useful supply of timber had by then come to an end, and it had become impractical to continue operations at such a distance from the capital and its ever improving dockyard facilities. Another factor may have been that, although the yard had been purpose built for the construction of the small-scale warships of the early sixteenth century, it was no longer adequate for the larger ships of the seventeenth century, and conditions must have been very cramped. Although a slipway was unearthed within the walls during the 1940s excavations the overall length of the first ship was greater than the walls themselves, and the second contract to build two ships simultaneously could not possibly have been carried out solely within the walls. The existing layout did not really lend itself to shipbuilding. The walls may have given plenty of protection from attacking forces and, to a lesser extent, from the weather, but they must have presented serious problems when it came to materials storage and handling. There does not appear sufficient storage space within the walls for all the necessary timber, let alone for its cutting and preparation. No doubt this was done outside the walls and only the finished timbers brought to the slipway. To get them to the slipway meant having to enter the fortifications either through one of the two small side doors or else taken around the end of the walls and across the shore-front. This was clearly a highly inefficient operation and this, together with the other factors mentioned, makes it no surprise that operations did not continue at the yard for any more than a decade.

### *Glückstadt*

The fortified town of Glückstadt was established on the river Elbe in 1616. It was basically a small border garrison town, with a commercial harbour inside its fortifications. At first there was little reason for the navy to have a base in the area, but the decision to impose tolls on the Elbe in 1629 and the subsequent blockade by the Hamburg fleet in 1630 meant that a significant naval presence was thereafter required.<sup>67</sup>

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<sup>67</sup> A map of Glückstadt in 1628 shows that there were no dockyard facilities before this date (F. H. Jahn, *Grundtræk til Christian den Fjerdes krigshistorie*, (København, 1820), endpiece).

The possibilities of having any major dockyard facilities were minimal since the nature of the town's fortifications did not easily lend itself to any riverfront development. It was, however, possible for a small number of ships to over-winter there. The usual procedure was for the summer fleet to be replaced by a handful of seaworthy ships which needed no significant repair work, while the others returned to Bremerholm for their refit. Some ship repair facilities must have existed though, since in 1635 a galley was sent there to be repaired,<sup>68</sup> and two years later a much larger warship was also repaired, although the timber and workmen did have to be procured from a local contractor.<sup>69</sup>

Early in 1639 a small warship, which had by then been on the Elbe for three years, needed extensive repairs. Rather than return to Bremerholm it was ordered to the small island of Rethøvel outside Glückstadt, where it was careened and new keel timbers fitted.<sup>70</sup> It was forced to use its own tackle and all the repair materials had to be sent from Copenhagen. This may have been the spur for Christian IV to order preliminary work on what sounds like the foundations for some form of harbour later that year, the plans of which he had drawn up himself.<sup>71</sup> Unfortunately no details of this development appear to exist. A few years later there are details of a ropewalk being moved from Copenhagen to Glückstadt, though presumably it was just the machinery that was transferred and not the building itself.<sup>72</sup> This would suggest that the naval facilities were being upgraded, but the improvements could only have been of minor importance and little is heard of Glückstadt as a naval base for the rest of Christian IV's reign.

With regard to actual shipbuilding the town was of negligible importance. There was no state run shipyard and there seems to have been very little activity by private contractors. One ship was built in 1627 but it was 1640 before a shipbuilder was granted permission to establish a permanent slipway.<sup>73</sup> There was, however, an

<sup>68</sup> Letter to *rigsadmiral*, 6 December 1635, *egenhændige Breve*, III, 451.

<sup>69</sup> Letter to Henrik Müller, 14 December 1637, *egenhændige Breve*, IV, 168.

<sup>70</sup> Letter to Iver Vind, 14 January, 1639, *egenhændige Breve*, VIII, 136–7.

<sup>71</sup> Letter to Henrik Müller, 4 April 1639, *egenhændige Breve*, IV, 223.

<sup>72</sup> Letters to Corfitz Ulfeldt, 1638–40?, and 25 February 1642, *egenhændige Breve*, VIII, 136 & 161.

<sup>73</sup> Knud Klem, *Skibsbyggeriet i Danmark og Hertugdømmerne i 1700-årene*, II, (København, 1986), 238–9.

important private shipyard nearby at Itzehøe where many ships were built for the Danish navy, and this was involved to some extent with the refitting of ships stationed on the Elbe.

### *Small Regional Bases*

As well as the dockyards at Copenhagen, Slotø and Glückstadt there were a number of other naval bases dotted around the realm. In Norway the island of Flekkerø in Flekkerfjord harbour was frequently used as a haven for naval squadrons during bad weather. It was initially established as a temporary naval base in 1556 to aid the fight against piracy, but its use must have been limited since the blockhouse was demolished again just five years later.<sup>74</sup> Christian IV first thought about re-establishing it in 1617, although it was not until 1635 that a new wooden blockhouse was actually completed. Then, after inspecting it, he decided to build a more substantial stone fortification that was finished in 1642.<sup>75</sup> In 1635 a small fleet was to be over-wintered in Norway to be ready as early as possible the following year to sail against the pirates that had been sailing in Norwegian waters. In order to service this fleet a rudimentary dockyard was established consisting of a careening wharf, a mast crane and a shed for storing sails and ropes.<sup>76</sup> Seven ships were based there that winter, but it was never used as a permanent naval base. The reason appears to be that because Glückstadt was now established as a naval port on the North Sea then it would be able to serve as the base for Norway as well, as a letter from Christian IV demonstrates:<sup>77</sup>

In winter none of the warships shall be stationed in Norway, as those that lie here [Glückstadt], can come quickly up to Norway, as the need arises.

However, its strategic location meant that Flekkerø was still regularly used as a haven and ships occasionally took on provisions there, but the shore facilities were never developed beyond those erected in 1635.

<sup>74</sup> Barfod, *Christian 3.s flåde*, 112 & 157.

<sup>75</sup> Letter to Frederik Urne, 19 May 1635, *egenhændige Breve*, III, 390–1.

<sup>76</sup> Probst, *Christian 4.s flåde*, 139 & 207.

<sup>77</sup> Letter to Corfitz Ulfeldt, 25 August 1637, *egenhændige Breve*, VIII, 110.

There were also a number of small coastal towns that kept their own small vessels for coastal defence. In many cases these were privately owned *defensionskibe* or *borgerskibe*, but the names of some of the navy's ships suggest they may have been regionally based, such as *Aarhus Jagt*, *Korsør Skude* and *Stavanger Boyert*, although many of these were just transport ships. The only towns that could come close to being considered as naval bases were Kolding and Haderslev on the east coast of Jutland, which together kept a fleet of four or five small vessels in operation. Both towns had small commercial shipyards and although one large warship was built at Haderslev in 1596–8, and another at nearby Ærøsum in 1609, there is no evidence to suggest that there was any permanent naval shipyard facility in either place. The commercial yards at the two towns did, however, build a number of galleys and other small vessels for the navy.

### *Christian IV's Dockyards in Perspective*

By the end of his reign Christian IV had created a truly impressive dockyard infrastructure for his navy. The port city he created at Copenhagen could boast one of the best integrated naval infrastructures in the whole of Europe, with its only rival being the Venetian Arsenal.<sup>78</sup> The combined dockyard, arsenal, and victualling store at Copenhagen enabled ships to be built, repaired, and mobilised, and all their necessary equipment manufactured, all within one area, and all under the direct control of the king and the state administration. The flattering description by Cormanin shows that Copenhagen,

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<sup>78</sup> The Venetian arsenal was similarly integrated with shipbuilding, ship repair, the manufacture and storage of naval stores all within the one area. However, where the Venetian arsenal differs is that within its bounds a number of separate shipyards operated privately. In terms of area the Venetian arsenal occupied 60 acres while the combined elements of the Copenhagen dockyards measured approximately 50 acres. English, Dutch, French or Spanish dockyards did not have the same level of integration and relied heavily on private contractors for the supply of both ships and stores. F. C. Lane, *Venetian Ships and Shipbuilders of the Renaissance*, (Baltimore, 1934), 129–45; R. C. Davis, *Shipbuilders of the Venetian Arsenal*, (Baltimore, 1991), 10–46. However, communication with Leonor Freire Costa would suggest that a detailed comparison with the royal dockyard in Lisbon might prove fruitful. I am grateful to her for supplying copies, with brief translations, from *Naus e galeões na Ribeira de Lisboa*, (Cascais, 1997).



of which Fynes Moryson could say in 1593 that he 'observed no beauty or magnificence',<sup>79</sup> had under Christian IV become a northern 'factory of marvels'. It is clear that Christian IV was the main driving force behind the whole development, and it is significant that virtually all commands relating to the construction works came directly from his hand. Only the construction of the road in 1634 was ordered via the *Danske kancelli*, all other instructions came personally from Christian IV.

There are two ways of looking at these developments. On the one hand Christian IV was a great visionary who created the foundations for the city's expansion, the boundaries of which were not exceeded for over two hundred years. On the other hand it could be said that Christian IV was unrealistically ambitious and created a city far larger than was actually necessary at the time, resulting in much wasted work and expense.

The speed with which the new fortifications were considered necessary, only twenty years after the first modifications, severely questions his original foresight. It is true that the first fortifications greatly improved the existing town walls but the extension of the town boundary was very modest. The fact that he was able to create a fortified naval town whilst leaving the naval dockyard outside the fortifications also seems quite bizarre. Had he had the sense to build a slightly larger wall the first time that enclosed the dockyard, it might have eliminated the need for the later developments. Admittedly this would have created a far less impressive city but it would have certainly been more in keeping with the city's commercial and demographic needs, and with the state budget. As it was, the extended city boundaries were to serve the city adequately well until the industrial revolution in the nineteenth century forced any further expansion. However, Christian IV's ruthless, and at times reckless, ambitions ensured that the city was created in his own extravagant mould, to the benefit of future generations, but to the financial detriment of his own.

The development of Copenhagen lucidly demonstrates Christian IV's way of thinking. Rather than waiting for organic change to occur he felt he could somehow force his ambitions into fruition by

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<sup>79</sup> Fynes Moryson, *An Itinerary of Ten Years Travel*, (1617, reprinted Glasgow, 1907-8), IV, 122.

creating an impressive physical structure and hoping that this would automatically bring with it the desired commercial or military success, without the introduction of any of the necessary political or administrative structures. It is significant that the only section of his planned new town in Copenhagen that was completed was Nyboder, which required his own constant supervision to ensure its construction. However, despite the over-ambitious development of the city of Copenhagen, it cannot be denied that the dockyard development was much needed and its massive scale perfectly matched the ambitions and size of the navy at that time.

However, the development of such a large dockyard facility was not purely driven by the overblown desires of an ambitious king. There were sound practical reasons as well. Most of the other maritime powers in Europe had a deficit of naval materials, but a private economy by which these could be provided. In contrast Denmark, and the other lands over which Christian IV held sovereignty and suzerainty, were blessed with an abundance of raw materials such as shipbuilding timber, pitch, tar, sulphur and iron, plus fertile agricultural lands, which were needed to build, arm and victual a navy. But the Danish economy was comparatively under-developed. If Christian IV wished to process these raw materials into warships and ordnance, and then supply them with victuals, he had to do so within the state system, which meant developing a sufficiently large state dockyard, not to mention cannon foundries, powder works, bakeries and breweries. Not quite everything could be supplied within the state system, but Christian IV certainly saw self-sufficiency as a definite goal, as demonstrated in his attempts to foster a native hemp growing industry in 1626.

The one major deficiency of Copenhagen as a naval base was the lack of a dry-dock. This sounds strange from an English perspective where dry-docks were relatively numerous but from a European perspective it was not at all unusual. France did not have a dry-dock until the latter half of the seventeenth century, and both Spain and Sweden, like Denmark, did not have one until well into the eighteenth century.<sup>80</sup> Before the development of dry-docks in England the way to access a ship's hull for cleaning and minor repairs was

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<sup>80</sup> Jan Glete, *Navies and Nations*, 65; José P. Merino, 'Graving Docks in France and Spain before 1800', *Mariner's Mirror*, 71 (1985), 35–58.

to beach it and wait for the tide to go out. In the Mediterranean and the Baltic, where the tidal reach is minimal, this was not an option and careening was the only viable alternative for large vessels.

In contrast to the developments in Copenhagen, the establishment at Slotø was extremely modest. The sole purpose for its foundation was simply to exploit the timber in the area, without the expense of bringing it all to Bremerholm. This function was successfully carried out for around ten years while the stocks of local timber remained. It was never intended to be a permanent dockyard, and the experiment at over-wintering clearly demonstrated that its remoteness and lack of facilities precluded it from any further development.

As a year-round naval base Glückstadt suffered from the same difficulties as Slotø. All the materials, men, and victuals had to be supplied from Copenhagen, or else procured at a price from local contractors. Despite these disadvantages it is perhaps surprising, given Christian IV's obvious affection and ambitions for Glückstadt, that he did not do more for the Elbe squadron. Financial considerations may have played a part, especially as the *rigsråd* would not have consented to expending large sums of Danish state revenue on a base in the duchy of Holstein. This geographical position also created the added disadvantage that it was in a defensively precarious position, laying on the extreme southern edge of the realm on a more or less hostile border. To have created a major naval establishment in such a position would have been folly, and Christian IV perhaps let common sense prevail in this case and resisted any temptation to lavish extravagant facilities on his navy in this area. Just about enough was done to enable a squadron to be kept fit and ready on the Elbe, without the development of any elaborate or costly permanent facilities.



## CHAPTER SEVEN

### THE ADMINISTRATION OF THE NAVAL BREMERHOLM DOCKYARD

The Bremerholm dockyard was the single largest workplace in the Danish realm. In the 1620s, when we can first put an accurate figure on numbers, there was a permanent workforce of around 700 men, consisting of skilled craftsmen, convict labourers, seamen and ancillary workers. In addition several hundred seamen were stationed there during the winter months to assist with refitting the fleet. In the early 1620s the total number of seamen retained over the winter was in the region of 800. Not all of these men, of course, worked at Bremerholm, but the total number of men working at the dockyard in the winter months was certainly well in excess of a thousand. By the 1640s this figure was more like two thousand. In order for this number of men to work effectively they had to be organised into some kind of administrative structure.

#### *General Conditions of Work*

The dockyard was divided into summer and winter working conditions. Summer lasted from Shrovetide to Martinmas, during which time the hours of work were from 5 a.m. to 7 p.m., with a break between 10 a.m. and 12 noon. During the winter the hours of work were from dawn to dusk with the same two-hour lunch break.<sup>1</sup> Productivity rates in winter were reduced in line with the shorter hours and additional rations were allocated to the men. Although the hours worked per man were less in the winter, the increased number of men would ensure that an equivalent or greater number of man-hours were worked. It was also common practice to hire

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<sup>1</sup> Proviantskriver's commission, *Kancelliets Brevbøger*, 16 April 1625; Smith's commission, *Kancelliets Brevbøger*, 26 April 1626; and Gate-keeper's commission, *Kancelliets Brevbøger*, 26 May 1646.

additional men on a temporary basis in the spring to ensure that the fleet would be ready to sail on time.

All men working at the dockyard were bound to comply with a number of articles known as the *Holm- og arsenalartikler*, which detailed the codes of conduct and regulations governing dockyard and arsenal employees. They were first formulated in 1587 and were published, in an expanded form, in 1625. They dealt principally with matters of discipline, naval jurisdiction and the arrangements for watch keeping, but they also outlined the responsibilities of certain officials and craftsmen who were in charge of the dockyard's operation.<sup>2</sup> These regulations, comprising 80 articles in all, were to be read in their entirety to the workers every month. Seamen at the dockyard were also bound to comply with the *Skibsartikler* that detailed the rules and regulations for all sea-going personnel.

Unlike in many European dockyards the workers were not members of crafts guilds. Christian IV disliked guilds intensely and considered that their restrictive membership and practices hampered the development of a dynamic and progressive industry. In 1600 he instructed Copenhagen's town council to undertake a review of the town's guilds and in 1613 he outlawed crafts guilds altogether, because of the 'great nuisance' to the kingdom caused by the guild statutes and laws.<sup>3</sup> In particular he was concerned that the guilds would discourage skilled foreign craftsmen from coming to Denmark. This law was not a success, however, and Christian IV was forced to back down and within a few years guilds were again allowed to operate.<sup>4</sup> The state's employees, including dockyard workers, however, would not have been allowed to organise themselves into guilds.

Most of the officials and craftsmen working within the dockyard received a commission through the *Danske kancelli*, which outlined their duties and rates of pay. These varied in length from just a few lines for a minor craftsman to several pages of highly detailed instructions for one of the senior management positions. This ensured that

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<sup>2</sup> *Holm- og arsenalartikler*, 8 May 1625, V. A. Secher, *Corpus Constitutionum Danicæ*, (København, 1887–1918), IV, 230–56.

<sup>3</sup> Missive to Copenhagen town council, 13 March 1600, *Corpus Constitutionum Danicæ*, III, 99–100; Order relating to guilds, 19 June 1613, *Corpus Constitutionum Danicæ*, III, 408–9.

<sup>4</sup> Svend Ellehøj, *Christian IV.s tidsalder 1596–1660*, (*Danmarks historie*, 7), (København, 1964), 223–6.

everyone was aware of their responsibilities and also provided a yardstick by which to monitor their performance. Depending on their seniority the officials and workforce were paid on an annual, monthly or daily basis. Some workers were paid a small annual sum as well as a regular monthly payment. Others were paid solely on a piece-work rate.

### *Senior Management*

The most senior official in charge of the dockyard and the day to day running of the navy was the *Holmens admiral* (dockyard admiral). The office came into existence during the reign of Frederik II as the steadily growing importance of Bremerholm brought about the need for a dedicated official to take charge of its operation.<sup>5</sup> The office holder was typically a nobleman who had already served as an officer at sea, and as well as receiving a salary he was usually assigned a *len* as part of his rewards of office. He was responsible jointly to the *rigsadmiral* and to the *statholder* in Copenhagen or *rigshofmester*. The responsibilities of the office were enormous and it is hardly surprising that the incumbents were frequently rebuked for not carrying out their duties to the required standards. In fact the expansion of the navy under Christian IV had made the job virtually impossible.

In contrast to the higher state officials discussed in Chapter Two, the duties of the *Holmens admiral* were precisely laid out in their commissions of employment. These steadily got more detailed with each successive appointment. The commissions from Frederik II's time contained just a few articles,<sup>6</sup> but from Godske Lindenov's commission in 1610 there were upwards of twenty individual articles.<sup>7</sup> These commissions show that the *Holmens admiral* was responsible for everything that went on at Bremerholm, including the construction and refitting of ships, the manufacture of all materials in the dockyard workshops, the discipline of all seamen and craftsmen, and the

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<sup>5</sup> The first *Holmens admiral* was appointed in 1564. (H. D. Lind, *Fra Kong Frederik den andens tid: Bidrag til den dansk-norske sømagts historie 1559–1588*, (København, 1902), 74).

<sup>6</sup> Lavrits Kruse's commission in 1578 contained six articles, and Erik Vognsøn's in 1585 contained eight. (Lind, *Fra Kong Frederik den andens tid*, 196 & 207).

<sup>7</sup> *Kancelliets Brevbøger*, 23 Feb 1610.

operation of the royal transport fleet. His official duties also overlapped with those of the *rigsadmiral* to some extent, in that he was also responsible for the recruitment and examination of all seamen and naval officers. During the periods that the office of *rigsadmiral* was vacant the *Holmens admiral* became the highest naval officer, and so a large part of his time was also spent at sea commanding the fleet, even though these sea-going duties were not specifically mentioned until 1645, and then only in passing.<sup>8</sup>

The first *Holmens admiral* during Christian IV's reign was Børge Trolle who took over the post in 1596. He came from a long line of admirals and was already a well-respected seaman when he took up office. However, he stayed at the dockyard for only three years. It is not clear why he left office and there are no references to him in naval service after 1599, despite the fact that he lived until 1610. He may have retired voluntarily but, as he was probably still in his early forties, this seems unlikely. From the start he was a committed career professional, having gone through the accepted route for aspiring noblemen in becoming a *hofjunker* after a period of foreign study, before taking up service at sea. In an age when officials traditionally clung to their positions until promotion or death it would have been unusual for Trolle to have given up his post voluntarily. Although there is no definite proof, the fact that he died with his finances in disarray would suggest that there had been a fall from grace in some way or other.<sup>9</sup>

Whatever the reason for Trolle's departure, the post of *Holmens admiral* was not renewed until 1610 when the increasing prospect of war with Sweden brought with it the need to strengthen the navy's leadership. Godske Lindenov was appointed to the post but his effect at Bremerholm must have been minimal, since he spent most of his time at sea and died before the end of the war in 1612.

Another year went by before Sten Villumsen Rosenvinge was appointed in 1613. His commission was virtually identical to that drawn up for Lindenov, but his wages were 100 Dlr. less, at 500 Dlr. per annum.<sup>10</sup> Although he stayed in office for many years Sten

<sup>8</sup> *Kancelliets Brevbøger*, 25 Jan 1645.

<sup>9</sup> H. D. Lind, *Kong Kristian den Fjerde og hans Mænd paa Bremerholm*, (København, 1889), 68–70.

<sup>10</sup> Instruks og bestalling for Sten Villumsen, 3 September 1613, *Corpus Constitutionum Daniæ*, III, 412–7.



Villumsen could hardly be described as a model of administrative competence. He was frequently in dispute with his superiors and his workers, and came under suspicion of impropriety on more than one occasion. The most serious claim came in 1618 when he was suspended from duty and brought before the dockyard court to answer charges that he used the royal sawyers and timber for his own ends, connived with the rope maker to produce sub-standard rope and that he was remiss in his duties regarding the management of the workforce.<sup>11</sup> The verdict of the court is not known, but he was soon reinstated.

In 1625 Villumsen called on Prince Christian (V), in the absence of the king, to investigate the working practices of the master shipwrights, and in particular their private contracting work.<sup>12</sup> There was evidently some ill feeling here and the master shipwrights responded by making a confidential report to the prince on 'shipbuilding, the navy, the ship's carpenters, and other operations at Bremerholm' which made mention of certain 'improvident practices'.<sup>13</sup> It is not clear exactly what the allegations were, but Villumsen was called upon to account for them. Nor is it known what, if any, action was taken, although the fact that the prince had to intervene shortly afterwards to break up further disputes between the two parties would suggest that the affair was not satisfactorily resolved.<sup>14</sup>

Sten Villumsen was given permission to leave his office in 1630. Again the reason for his departure is unclear but it would be unfair to suggest that he was forced from office. He had recently been assigned a *len* in Norway and it would be reasonable to assume that he had had enough of the wrangling at Bremerholm and decided to move to Norway to manage his estate. Indeed one of the conditions of his being allowed to go was that he was to supervise the ironworks in Norway. As a *lensmand* he still continued to have connections with the navy by, for example, supplying timber and inspecting Norwegian ships that had been offered for royal service.

His successor was Erik Ottesen Orning who likewise had a

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<sup>11</sup> Instruction to Christian Friis, c. 3 Dec 1618, C. F. Bricka & J. A. Fredericia (eds.), *Kong Christian den Fjerdes egenhændige Breve*, VII, 20–1.

<sup>12</sup> Missive to Sten Villumsen, *Kancelliets Brevbøger*, 21 May 1625.

<sup>13</sup> Missive to Axel Arenfeldt & Mogens Kaas, *Kancelliets Brevbøger*, 15 May 1625.

<sup>14</sup> Missives to Sten Villumsen, David Balfour and Daniel Sinclair, *Kancelliets Brevbøger*, 12 July 1625.

controversial period in office. For the first few years he is mainly heard of in relation to the command of sea voyages and the operation of the royal cargo fleet in bringing supplies to Bremerholm. The first signs of dissatisfaction appear in 1639 when the king noted that his captains had been complaining about the lack of preparation of their ships that was 'without doubt through the admiral's dereliction, which should now be corrected'.<sup>15</sup> In July 1641 Christian IV himself experienced the poor state of the ships under Ottesen's charge. He reported in an obvious state of rage that:<sup>16</sup>

... I found the ship so leaky that it was only with great diligence that the ship was prevented from sinking, and that because of a lack of pumps, which were unfinished and in such a bad state of repair that they were useless, it was only God in heaven who helped us with a favourable wind into Bergen.

Afterwards it was decided to establish where the leak was, which was found between the stem and the figurehead, the condition of which must have been known to those at Bremerholm for a long time.

He went on to note that one night he had to go in his nightshirt to douse a fire in the poorly maintained galley stove. The ship's skipper also claimed that Ottesen neither listened to nor understood their complaints and that he would always assign to him the worst of the seamen at his disposal. The king had been under the impression that his seamen were well trained and was horrified to find that only a fraction of those on board could read a compass or were able to handle an oar properly.<sup>17</sup> Ottesen was immediately suspended from duty until he apologised and could demonstrate that the claims against him could never be repeated. The king was still not sure whether he had been reinstated by January 1642 when he referred to 'Erik Ottesen, or whoever is coming in his place'.<sup>18</sup> He did keep his job, however, only to come into conflict with the king again later that year and be threatened once more with dismissal.<sup>19</sup>

His conduct as a commander at sea also came into question during the Torstensson War but he still clung to his post until his death

<sup>15</sup> Letter to Corfitz Ulfeldt, 20 Dec 1639, *egenhændige Breve*, IV, 272.

<sup>16</sup> Letter to Sten Beck & Hans Ulrik Gyldenløve, 13 July 1641, *egenhændige Breve*, V, 99.

<sup>17</sup> Letter to Corfitz Ulfeldt, 21 July 1641, *egenhændige Breve*, V, 106.

<sup>18</sup> Letter to *rentemestrene*, 18 Jan 1642, *egenhændige Breve*, V, 166.

<sup>19</sup> Letter to Jørgen Vind, 31 Oct 1642, *egenhændige Breve*, V, 260.

in February 1645. He would not have held on to it for much longer though, because negotiations had already begun with his successor in January that year. Even his death could not prevent further disgrace, because when the Corfitz Ulfeldt embezzlement scandal broke he was clearly implicated in the whole affair.<sup>20</sup>

Kristoffer Lindenov, son of Godske Lindenov, took over the post in 1645. He appears to have been fairly reliable as *Holmens admiral* during the rest of Christian IV's reign, although his additional appointment in 1647 as *oberstløjtnant* (lieutenant colonel) in the army must have impinged on his ability to carry out his naval duties. His task, however, was made much easier with the appointment first of a *rigs-viceadmiral* (vice admiral of the realm) in 1645, then a *Holmens viceadmiral* (vice admiral of the dockyard) in 1652, and ultimately the new admiralty administration of 1655 shared the burden of his responsibilities. Like many of his predecessors, though, he left office in disgrace in 1657. Although the exact reason is unclear, there was a suggestion that he had been involved in the embezzlement of seamen's wages.<sup>21</sup>

Working in conjunction with the *Holmens admiral* was the *material-skriver* (clerk of materials), who was responsible for the supply of all materials needed to build and maintain the ships. As such he acted as the senior manager of the various dockyard workshops, supervising the supply of raw materials and regulating the quantity and quality of their output. This post was almost on a par with the *Holmens admiral*, and both men were required to work in close co-operation. Indeed some of the points relating to the supply of materials in the commissions of the two posts are virtually identical. The *material-skriver* operated with a great deal of autonomy with regard to the materials produced within the dockyard, but any additional materials that had to be procured from private merchants or contractors had to be ratified and countersigned by the *Holmens admiral*. This, together with the fact that his wages were a little lower than the *Holmens admiral's*, at 450 Kdlr., indicate that he was in a slightly junior position. However, he was still very much a senior manager, and held authority over all the other dockyard clerks.<sup>22</sup> He was to

<sup>20</sup> Lind, *Kong Kristian og hans Mænd*, 78–9.

<sup>21</sup> H. D. Lind, *Kong Frederik den Tredjes sømagt: det dansk-norske søværns historie 1648–1670*, (København, 1896), 104.

<sup>22</sup> Gotfried Mikkelsen's commission, *Kancelliets Brevbøger*, 22 December 1630.

keep a register of all materials supplied to Bremerholm and make a yearly inventory of all naval stores. A record was kept of all materials that were issued to each ship, and the inventories of all the ships' skippers were checked to ensure that they tallied with the materials issued. In order that the warships remained well equipped and to save costs, new materials were issued only after the same weight of old material was returned. The old materials were then re-used in the royal transport ships. To regulate this system separate account books were kept for the issue of new and old materials, and for the return of materials from the ships.<sup>23</sup>

The *materialskriver* had three or four assistant clerks and bookkeepers. In addition there was also a *tømmerskriver* (timber clerk), who was responsible for checking, measuring and keeping accounts of all timber coming to the dockyard. This was very much a junior post, earning only 60 Kdlr.,<sup>24</sup> but it did warrant its own assistant clerk.<sup>25</sup> The timber accounts simply consisted of a register of incoming timber and a rudimentary record of timber issued on a day-to-day basis to the different workshops and craftsmen.<sup>26</sup> In 1635 this post was amalgamated with that of *materialskriver*, who was in turn granted an additional assistant clerk. In effect the *materialskriver* took on the responsibility while the new assistant carried out the same work, at the same rate of pay, as the previous *tømmerskriver*.<sup>27</sup> The accounts for timber also continued to be kept separate from the other materials.

Like the men appointed to the post of Holmens admiral, those appointed as *materialskriver* were not noted for their competence or honesty. Gotfried Mikkelsen, who served in the post from 1629 to 1643, was investigated a number of times for failings in his accounts and was involved in Ulfeldt's embezzlement from the start. His successor, Hans Nummesen, was appointed by Ulfeldt in 1642 but he did not receive an official commission for the post. He was accused of being Ulfeldt's own servant and played a major part in the embezzlement scam. He was ignominiously removed from office in 1651.<sup>28</sup>

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<sup>23</sup> Rigsarkiv, Marinearkivet for 1655, 16–27. Bremerholmens materialskriverregnskaber 1593–1650.

<sup>24</sup> Commission for Jacob Jensen, *Kancelliets Brevbøger*, 22 Dec 1630.

<sup>25</sup> Commission for Povel Mortensen, *Kancelliets Brevbøger*, 11 Dec 1619.

<sup>26</sup> Rigsarkiv, Marinearkivet for 1655, 28–29. Bremerholmens Tømmerregnskaber, 1594–1658.

<sup>27</sup> *Kancelliets Brevbøger*, 3 Sept 1635.

<sup>28</sup> Lind, *Kong Kristian og hans Mænd*, 346–51.

*Ship Construction*

The work of the dockyard was split between the construction of new ships and the maintenance of existing ships. Ship repair constituted much the largest activity since each of the twenty to thirty warships, as well as the countless transport ships, had to be kept seaworthy on an annual basis. This work was mostly seasonal, with the majority of work being carried out while the fleet was laid up for the winter in preparation for the following year's sailings. The work on new construction was much more constant all year round, although at most only two or three ships would be being built at any one time. Although ship repair was the largest activity in terms of manpower, it is easier to look at the organisation of ship construction first, since much of the workforce and the materials they produced were also used in ship repair.

Ship construction can basically be divided into the construction of the hull and its outfit with all the necessary equipment needed for it to be able to put to sea. In overall control of both aspects was the *skibsbygmester* (master shipwright) who designed the ship and supervised the workforce. There were also junior shipwrights that were designated as *underskibsbygmester* (junior master shipwright) or simply *skibshygger* (shipwright). The distinction between the master shipwrights and the ordinary shipwrights is unclear but it would appear that the higher rank was a recognition of ability and seniority and naturally carried with it a much higher wage. Their actual duties regarding shipbuilding appear to vary very little.

The number of master shipwrights engaged as permanent employees was very small. Shipwrights were really only needed to supervise the construction of new ships as the skilled ship carpenters could carry out most of the routine ship repair work. Since many of the navy's ships were built in the provinces, the number of shipwrights actually working at Bremerholm could be very small indeed. It was stipulated, however, that at least one master shipwright should be present at Bremerholm at all times to supervise the work of the craftsmen and to ensure that good timber was used.<sup>29</sup> As a means of ensuring the shipwright's diligence the cost of any mistakes caused

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<sup>29</sup> Commission for Robert Petersen, *Kancelliets Brevbøger*, 2 November 1604; *Holm- og arsenalartikler*, 243–4.

by the negligence of his men would be deducted from his wages. The master shipwrights were also expected to train twelve apprentices in a four-year course of ship's carpentry, the best of whom were to be further instructed in the art of shipwrighty. They were granted extra rations for this work and were paid a small sum for each apprentice who completed their course.<sup>30</sup> As well as building the ships the master shipwrights were also involved in the survey of woods all over the realm to identify good shipbuilding timber.<sup>31</sup>

The actual work of building the ships was carried out by the *skibstømmermænd* (ship carpenters). They were supervised by around five *mestersvende for tømmermændene* (foreman journeyman carpenters). Sometimes the building of smaller vessels such as barges and galleys would be entrusted solely to a *mestersvend* rather than to a fully qualified shipwright. Occasional mention is also made of a *baadebygger* (boat builder)<sup>32</sup> but this was not a formal designation and probably referred to a *mestersvend* currently occupied in the building of a boat.

The ship carpenters were paid a day-rate that varied according to their ability. According to an ordinance of 1625 there were four different grades ranging from 28 to 16 skilling, with twenty carpenters in each grade.<sup>33</sup> However, the dockyard accounts show that the wage structure was much more complicated in practice, with 20 different rates of pay going as low as 9 skilling per day. The accounts also show that the men were paid only half their normal day-rate in the winter months.<sup>34</sup>

Working in tandem with the ship carpenters were the *savskære* (sawyers) who cut the timber to the correct size and shape, and the *borere* (auger-men) and *bolteslagere* (bolt hitters). The *borere* were described as 'the type of craftsmen whose work it is in shipbuilding to drill all the holes for bolts and nails', and the *bolteslagere* as the 'same type of worker as the *borere*, who after they have drilled the holes, also

<sup>30</sup> Missives to *rentemestrene*, *Kancelliets Brevbøger*, 6 May 1625 and 27 May 1637.

<sup>31</sup> For example Sinclair surveyed timber in Lolland in the 1620s. Rigsarkiv, Danske kancelli, B160, 29/1/1626. Balfour surveyed timber in Sjælland in 1628, *Kancelliets Brevbøger*, 19 October 1628; and Andersen surveyed timber in Scania in 1646, Rigsarkiv, Danske kancelli, B179e., 14 November 1646.

<sup>32</sup> Rigsarkiv, Marinearkivet for 1655, 30. Store Smedje Regnskaber, 1619.

<sup>33</sup> Missive to *rentemestrene*, *Kancelliets Brevbøger*, 6 May 1625.

<sup>34</sup> Rigsarkiv, Rentekammer Udgift Conto I.a., Klædekammer Regnskaber, Udgift 1640/4. In these accounts all woodworking craftsmen are grouped together and no distinction is made between the different trades.

drive in the bolts and nails'.<sup>35</sup> The sawyers and *bolteslagere* were paid 12 skilling per day (40 Kdlr. p.a.) while the *borere* were paid 10 skilling (35 Kdlr. p.a.). The sawyers were previously also paid a piece-work rate, with a pair of sawyers earning 1 skilling for every 4 *alen* (2.5m) cut, but there is no mention of this in the 1625 ordinance.<sup>36</sup> Also mentioned in the accounts were a *schruemager* (screw maker)<sup>37</sup> who presumably fashioned the wooden spikes and treenails, and a *pompborer* (pump borer),<sup>38</sup> who, rather surprisingly for what must have been a fairly skilled job, earned just 10 Kdlr. per annum. The manufacture of the masts and upper works of the ships was a specialist trade carried out by the *mersmager* (top maker), who held a relatively high position among the ship carpenters.

The last thing needed to make a ship watertight was to seal the joints by caulking them with oakum and tar. In most countries this was recognised as a separate trade but this was not the case in Denmark, with the task being carried out by the ship carpenters. There was not even a separate term for the process, with orders given simply to 'tighten and seal' the ships. In fact the recognition of caulking as a separate trade occurred very late in Denmark.<sup>39</sup> A late eighteenth century encyclopaedia of sea terms still found it necessary to state, under the entry for *Kalfaterene* (caulkers): 'Those men who are used to tighten a ship, in England and France these are a separate trade or type of ship carpenter'.<sup>40</sup>

The fitting out of the ships was carried out by a number of other skilled craftsmen. The fine woodwork on the ships, such as the outfit of the officers' quarters, was carried out by the master joiners who earned 78 Kdlr.<sup>41</sup> In the 1620s there were two of them, but by the

<sup>35</sup> Georg Albrecht Koefoed, *Dansk Søe Ord-Bog: Forsøg til en Dansk Søe Ord-Bog med Beskrivelse paa hver Ord og deres Benævning i det Frandske og Engelske Sprog*, (Kronborg, 1993).

<sup>36</sup> Schlegel (ed.), 'Kort Overslag paa alt Rigens Indtægt og Udgift, som er nu giort og tilsammandragen den 24 Decembris Anno 1602', *Samlung zur Danischen Geschichte*, 1 Bd. 1 stk. (1773), 23–113; *Kancelliets Brevbøger*, 24 December 1598.

<sup>37</sup> Rigsarkiv, Marinearkivet før 1655, 15. Bremerholms Proviantskrifer Regnskab 1646/47.

<sup>38</sup> Rigsarkiv, Rentekammer Udgift Conto I.a., Klædekammer Regnskaber, Udgift 1621/22.

<sup>39</sup> Forordning om skibshovedsmændene . . . , October 1627, *Corpus Constitutionum Danicæ*, IV, 375.

<sup>40</sup> Koefoed, *Dansk Søe Ord-Bog*.

<sup>41</sup> Rigsarkiv, Rentekammer Udgift Conto I.a., Klædekammer Regnskaber, Udgift 1621/22.

1640s there was only one who was assisted by four journeymen.<sup>42</sup> The glass for the ships was manufactured by the master glazier and his journeyman, who earned 30 and 12 Kdlr. respectively.<sup>43</sup> It would be reasonable, though, to assume that the majority of their work was concerned with the royal palaces than with ships. The ships carvings and other decorations were painted by the *skibsmaler* (ship painter) or *Holmens maler* (dockyard painter) who did not have a permanent commission but was only called in when needed and paid on a piecework rate.<sup>44</sup>

As a ship neared completion a skipper would be appointed to it, who would work in conjunction with the master shipwright to ensure that the ship was rigged and outfitted in the way that he preferred. A small number of seamen were also usually allocated to a ship at this stage to assist with the rigging and other outfitting tasks.

### *The Dockyard Workshops*

The ironwork, rigging and other outfit materials were manufactured in the various dockyard workshops. Each had its own specialist personnel and management structure. The largest of the workshops was the forge where all the anchors, spikes and other metal fittings were manufactured. The management was carried out jointly by the *skriver i den Store Smedje* (clerk of the Great Forge) and the master smith. The clerk not only kept the accounts of the forge but also acted as its general manager. He was in charge of procuring the raw and scrap iron, and all the coal needed to fire the forges. All ironwork that was issued by the forge was measured, weighed and its intended destination recorded in his accounts.<sup>45</sup> The forge was accounted for separately and had its own heading in the *rentemesterregnskaber* accounts. The smiths were paid according to a piecework and hourly-rate agreement, the precise details of which are unknown. The clerk there-

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<sup>42</sup> Rigsarkiv, Marinearkivet for 1655, 14. Bremerholms Proviantskrivers Regnskab 1643/44.

<sup>43</sup> Rigsarkiv, Rentekammer Udgift Conto I.a., Klædekammer Regnskaber, Udgift 1640/41.

<sup>44</sup> Lind, *Kong Kristian og hans Mænd*, 391–2.

<sup>45</sup> Rigsarkiv, Søetaten For 1655, 30. Bremerholmens Store Smedje Regnskab 1618–1621.



fore had to keep an accurate register of all employees and the amount and type of work carried out. These accounts were then submitted to the *rentekammer* and a lump sum issued to him to distribute the wages to the individual workers.

In 1624 the new clerk's commission stated that he was also responsible for keeping a record of the muster lists for the dockyard and for supervising the supply of food to all the men at Bremerholm.<sup>46</sup> This was most likely just a temporary measure since the post of *proviantskriver* was vacant at the time and not, as Lind asserts, an integral part of the job.<sup>47</sup> The amount of work did steadily increase though and by 1624 he had four assistant clerks.

The organisation of craftsmen in the forge was similar to that of the shipwrights, the highest level of craftsmen being the master smith who supervised the design of the ironwork and controlled the working of the forge.<sup>48</sup> The work of the individual blacksmiths was supervised by the foreman journeyman smiths. The blacksmiths were then classified into two kinds who carried out the rough and the fine work respectively.

The second largest workshop was the ropewalk, which manufactured all the rope and cable needed for the ships. The craftsman in charge was known as the *rebslager paa Bremerholm* (rope-spinner at Bremerholm) and was responsible for assessing the quality of all hemp coming into the dockyard, and for the spinning of all cordage at Bremerholm. He kept accounts in conjunction with the *materialskriver*, who was his immediate supervisor. From 1626 his wages were based largely on piecework, earning 9 Marks for every skippund (160 kg) of rough cable, 9 Kdlr. for rope, and 18 Kdlr. for twine.<sup>49</sup> An impression of the work of the ropewalk is given by Robert Munro who, when visiting the dockyard in 1626, was informed that 'in twenty foure houres time, they were able to furnish the greatest ship the King had, of Cables and of all other tackling and cordage, necessary to set out the Ship'.<sup>50</sup>

<sup>46</sup> Commission for Anders Haar, *Kancelliets Brevbøger*, 11 March 1624.

<sup>47</sup> Lind, *Kong Kristian og hans Mænd*, 343–5.

<sup>48</sup> Commission for Andreas Bentsvinger, *Kancelliets Brevbøger*, 27 April 1626.

<sup>49</sup> Commission for Hans Teigler, *Kancelliets Brevbøger*, 11 March 1626; Commission for Niels Pedersen, *Kancelliets Brevbøger*, 3 July 1634.

<sup>50</sup> Robert Munro, *Monro His Expedition with the worthy Scots Regiment (called MacKeyes Regiment) levied in August 1626...* (London, 1637), I, 87.

When raw hemp and flax came into the dockyard it would first be cleaned and worked at the dockyard hemp-mill, under the supervision of the *hampebanker* (hemp beater), who was paid 40 Kdrl. per annum.<sup>51</sup> Specific quantities of hemp were stipulated for each workman and boy to clean in the summer and winter, with the amount of wastage also strictly regulated. The cleaned hemp would then be passed on to the rope-spinner or his foreman who would supervise the spinning of it into the desired form. The completed rope was then transferred to the drying room where it would lay for fourteen days before being tarred, if necessary. The workers at the ropewalk consisted of around 14 journeymen who spun the rope,<sup>52</sup> and a *begsyder* (pitch boiler) and *tjæresyder* (tar boiler) who heated the pitch and tar to treat it.<sup>53</sup>

Sails were manufactured at the Sejlhus workshop. Cloth was probably not actually woven there since most of the woven cloth came from Copenhagen's workhouse, the *len*, or from private merchants. The *sejllægger* (sail maker) was the master craftsman responsible for manufacturing the sails and, with his foreman, managed a workforce of around twenty journeymen and fifteen boys.<sup>54</sup> In 1627 Herman Lygtemager received a commission as *sejllægger og kompasemager* and became responsible for the manufacture and repair of compasses, hourglasses and lights as well as sails.<sup>55</sup> Quite how these seemingly unrelated activities became linked is unknown but the practice was continued after his death in 1654. His wages, at 200 Kdrl., were more than double that of an ordinary sail maker. Also working in the Sejlhus was the *skredder paa Bremerholm* (dockyard tailor) who manufactured all the flags, bulwark and top decorations, and other fancy work that may have been required for the navy. He was paid solely on a piecework rate and received his orders directly from the *Holmens admiral*.<sup>56</sup>

<sup>51</sup> Commission for Hendrik Meyer, *Kancelliets Brevbøger*, 14 January 1625; Commission for Jens Madsen, *Kancelliets Brevbøger*, 25 October 1635.

<sup>52</sup> Rigsarkiv, Marinearkivet før 1655, 14. Bremerholms Proviantskrifer Regnskab 1643/44; 15. Bremerholms Proviantskrifer Regnskab 1646/47.

<sup>53</sup> Rigsarkiv, Rentekammer Udgift Conto I.a., Klædekammer Regnskaber, Udgift 1621/22.

<sup>54</sup> Rigsarkiv, Marinearkivet før 1655, 14. Bremerholms Proviantskrifer Regnskab 1643/44; 15. Bremerholms Proviantskrifer Regnskab 1646/47.

<sup>55</sup> Commission for Herman Lygtemager, *Kancelliets Brevbøger*, October 1627.

<sup>56</sup> Commission for Jørgen Rassmussen, *Kancelliets Brevbøger*, 23 November 1619.

The smallest workshop at Bremerholm was the block-making workshop where around five or six *blokkedrejere* (block turners) made all the blocks, deadeyes and similar fittings. Like the other workshops it was jointly supervised by the *materialskriver* and the *Holmens admiral*. It is unclear whether there was a master block turner, but it is likely that the senior craftsman in this area was simply one of the foreman ship carpenters. In 1630 it was stipulated that each block turner was to make twenty blocks or their equivalent in block-sheaves, pump-shoes and similar items, every week during the summer, and sixteen in the winter.<sup>57</sup> The wages seem to have been relatively low, at just 30 Kdlr. per year in the 1620s for a senior block turner, although by the 1650s this figure had risen to 200 Kdlr.<sup>58</sup>

### *Ship Repair and Maintenance*

The routine repair of ships was largely carried out by their crews under the supervision of the ships' own skippers. The total number of men employed in repairing the ships varied from a couple of hundred in the summer months to a couple of thousand in the winter. With so many ships needing repair on an annual basis and with so many men involved it became necessary to have one person to co-ordinate the work on all the ships. This was originally an informal position but in 1626 the first official *overskipper* was appointed.<sup>59</sup> They had responsibility for all repair work that did not come under the shipwright's remit and they were in charge of all naval personnel present at Bremerholm. Every morning the seamen at the dockyard were mustered by the *overskipper* and each man was assigned to work on a particular ship or in one of the dockyard workshops. He naturally worked in close co-operation with the *Holmens admiral* and any equipment requested by individual skippers had to be approved and signed for by both men. The *overskipper's* wages started at 150 Kdlr. but steadily rose to 200 Kdlr. in 1633 and 400 Kdlr. in 1639,<sup>60</sup> putting the post briefly on a par with the master shipwrights. When

<sup>57</sup> Materialskriver's commission, *Kancelliets Brevbøger*, 22 December 1630.

<sup>58</sup> Lind, *Kong Kristian og hans Mænd*, 382.

<sup>59</sup> Commission for Rasmus Søfrensen Samsing, *Kancelliets Brevbøger*, 19 July 1626.

<sup>60</sup> *Kancelliets Brevbøger*, 8 October 1633 and 12 July 1639.

Rasmus Thyggesen took over the post early in 1640 his salary was set at only 200 Kdlr.<sup>61</sup> but this was increased to 350 Kdlr. in 1648.<sup>62</sup>

The repair work on the hulls was carried out by the ship carpenters. Only when a substantial rebuild was being undertaken were the master shipwrights involved. As well as those ship carpenters employed all year round there were also a large number of men who were hired on a temporary basis in the spring, when work on refitting ships was at its height. At first this was an ad hoc arrangement that was used during wartime or for special circumstances.<sup>63</sup> In 1617 the practice was formalised in a missive sent to a total of 36 *lensmænd* ordering them to send as many ship carpenters as possible to Bremerholm for two months, from March, every year.<sup>64</sup> This policy initially had only limited success, with only eleven men arriving in the first year.<sup>65</sup> The following year 59 men arrived but a further 79 failed to turn up.<sup>66</sup> However, as registers were gradually made of all carpenters it became more difficult for men to evade this order,<sup>67</sup> but problems still persisted in getting enough men to comply, and Christian IV repeatedly had to request his *lensmænd* to provide the necessary men throughout his reign.<sup>68</sup>

One aspect of the repair of a ship's hull was to clean it of marine growth by careening the ship. This was a skilled and delicate operation which could easily damage the ship and injure men, and could even lead to the loss of the ship altogether. There was a dedicated official who was responsible for this task, known as the *brademester* (slip master), who was the highest paid of the foreman ship carpenters and was also known as the *øverste mestersvend for tømmermændene* (senior foreman journeyman carpenter). He earned 65½ Kdlr. per annum.<sup>69</sup> His job entailed emptying the ship of all movable mate-

<sup>61</sup> Commission for Rasmus Thyggesen, *Kancelliets Brevbøger*, 22 May 1640.

<sup>62</sup> Lind, *Kong Kristian og hans Mænd*, 330–1.

<sup>63</sup> Jørgen H. Barfod, *Christian 3.s flåde*, (København, 1995), 60–1 & 265; Lind, *Fra Kong Frederik den andens tid*, 9, 48, 75.

<sup>64</sup> Missive to lensmænd, *Kancelliets Brevbøger*, 17 February 1617.

<sup>65</sup> *Kancelliets Brevbøger*, 20 February 1617.

<sup>66</sup> *Kancelliets Brevbøger*, 30 April and 13 November 1618.

<sup>67</sup> Knud Klem, 'Christian 4. og Bremerholm', *Handels- og Søfartsmuseets Årbog*, (1977), 84–8.

<sup>68</sup> Missives to *lensmænd*, *Kancelliets Brevbøger*, 20 June 1623; 6 February 1624; 10 January 1632; and 11 February 1633.

<sup>69</sup> Rigsarkiv, Rentekammer Udgift Conto I.a., Klædekammer Regnskaber, Udgift 1640/41.

rial, hauling it over to one side using a system of blocks and tackle, and then ensuring that the ship returned to a stable upright position at the end of the manoeuvre.

### *The Ancillary Workforce*

To keep the dockyard running smoothly and to ensure that the workers were fit and healthy required a variety of ancillary workers. Although they carried out vital tasks they were secondary in importance to the main workforce and may be dealt with fairly briefly here.<sup>70</sup> Each of the three entrances to the dockyard was controlled by a *portner og vægter* (gate-keeper and watchman) who held responsibility for opening and closing the gates and making sure that no-one entered or left without authorisation, and to ensure that no materials were stolen. The gatekeepers were paid 68 Kdrl. per annum and were assisted by three sentries who each earned a total of 54 Kdrl. per annum.<sup>71</sup> A watch was also kept aboard ships that were laid up at the dockyard by seamen organised into a day and a night watch. In 1620 there was a day watch of 20 and a night watch of 25. By 1630 the total number of seamen on watch-keeping duties had risen to 144.<sup>72</sup>

All goods entering or leaving the dockyard, and all materials issued to the ships, were assessed by the *overvejer, vrager, tolder og maaler* (chief weigher, assessor and measurer) who worked under the supervision of the *proviantsskriver* and the *materials skriver*. The importance of the post is reflected in the relatively high salary of 150 Kdrl.<sup>73</sup> An assistant weigher, earning half that amount, was responsible for keeping the books as well as the actual measuring. There was also a boy helper who received 4 Kdrl. a month.<sup>74</sup>

The kitchen was run by the cook and his assistant, the *kældersvend*

<sup>70</sup> Unless otherwise stated the information in this section comes from Lind, *Kong Kristian og hans Mænd*.

<sup>71</sup> Commission for Peder Lauritzen, *Kancelliets Brevbøger*, 26 May 1646.

<sup>72</sup> Rigsarkiv, Rentekammer Udgift Conto I.a., Klædekammer regnskaber, 1620/21 & 1630/31.

<sup>73</sup> Commission for Laurits Nielsen, *Kancelliets Brevbøger*, 9 May 1634.

<sup>74</sup> Commission for Hans Christensen, *Kancelliets Brevbøger*, 30 May 1625.

(cellar swain). These are the only men ever mentioned in connection with the kitchen in the accounts but the quantity of food required to feed the hundreds of workers was vast and, although the food was principally boiled meat, salt fish and bread, it is inconceivable that just two men could prepare and serve it all. In 1580 the kitchen had a staff of ten and it is reasonable to assume that this figure increased as the dockyard expanded during Christian IV's reign.<sup>75</sup> Jón Olafsson described one of his acquaintances in 1616 as the *ypperste kældermester paa Bremerholm* (senior cellar master at Bremerholm),<sup>76</sup> which would suggest that there was certainly more than one *kældersvend*. There is also mention of a *fischebløder* (fish soaker) in the accounts.<sup>77</sup> The cook and his assistants came under the *proviantsskriver's* direct control, as did all seaborne cooks. The number of men who were allowed to receive meals and those allowed a beer ration was agreed every week with the *Holmens admiral* and any additional men who required rations had to be separately accounted for. Strict guidelines were issued as to how much food was to be issued. For instance a barrel of headless cod was sufficient for 336 meals, a barrel of grain 1408, a barrel of butter 3332, and so on.<sup>78</sup> These numbers varied from time to time but no indication is ever given as to quite how the figures were calculated.

The administration of the dockyard hospital, which from 1628 was located outside the dockyard itself, was carried out by the *forstander i sygehuset* (hospital manager). A cook and *kældersvend* prepared the patients' food and two women were employed as cleaners. The treatment was undertaken by the *bartskærer* (barber surgeon), who also attended to patients at the arsenal, victualling store and the workhouse. In 1636 a professional physician, or *medicus*, was also engaged who was intended to supervise the barber surgeons, but he stayed in the post for less than a year. Another physician was appointed in 1644, and in 1646 he became the physician for both the navy and the workhouse, with a salary of 400 Kdlr.<sup>79</sup>

<sup>75</sup> Lind, *Fra Kong Frederik den andens tid*, 201–2.

<sup>76</sup> *Memorier og Breve, I, Islænderen Jón Olafssons oplevelser som bøssekytte under Christian IV*, (København, 1966), 25.

<sup>77</sup> Rigsarkiv, Marinearkivet for 1655, 28. Bremerholms Tømmerregnskaber 1601/02.

<sup>78</sup> Missive to Sten Villumsen, *Kancelliets Brevbøger*, 27 April 1624.

<sup>79</sup> Commission for Niels Wichmand, *Kancelliets Brevbøger*, 26 May 1646.

The spiritual needs of the workforce were administered by the dockyard's parish priest. This post came into being when the old forge was converted into the *Holmens Kirke* in 1619. He also assumed the role of dean to the seagoing chaplains in the navy. His staff at the church expanded as the navy grew, and by the end of Christian IV's reign there were two curates and two vergers. The curates led the services inside the dockyard for those working on Sundays and holy days and also acted as teachers for the boys at the dockyard. When the old hospital was converted into a school in 1628 a full time schoolmaster was appointed as a member of the church staff. He was to teach a class of twelve boys an 18-month course in the basics of reading, writing and the catechism. The instruction of boys in the arts of seamanship and navigation was carried out by the navigation teacher. This post was loosely attached to the church school and was held initially by an Englishman, and then by a Dutchman. Strangely the post was left vacant from 1624 until 1647. The instructor was paid as an ordinary skipper and was expected to put to sea as such if the need arose.<sup>80</sup>

There were two naval courts of law at this time. The first, the equivalent of the English High Court of Admiralty, met at Copenhagen Castle and was presided over by the *rigsadmiral*, *rigskansler* and other members of the state administration. This met infrequently and heard non-criminal cases relating to maritime law, and the settlement of disputes concerning prize money and maritime tolls. The second was essentially a court-martial and dealt with more mundane matters such as theft and indiscipline. This was presided over by the *Holmens admiral* and its members were called from serving naval officers.<sup>81</sup> These courts had no dedicated personnel until 1646, when a fiscal was appointed to ensure that 'all is kept in order at Bremerholm, the arsenal and the navy after the current provisions'.<sup>82</sup> He was not paid a regular salary but received a quarter of all goods confiscated and fines imposed. There were also two naval provosts at the dockyard who kept discipline among the workforce.

The last documented ancillary official at Bremerholm is the *vindskriver*, who was paid 64 Kdlr. a year to keep a record of the wind

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<sup>80</sup> Commission for Bagge Wandell, *Kancelliets Brevbøger*, 16 June 1647.

<sup>81</sup> F. S. Grove-Stephensen, 'Marinens jurisdiktionsforhold for 1660', *Marinehistorisk tidsskrift*, (2/1984), 19–31.

<sup>82</sup> Commission for Peder Knudsen, *Kancelliets Brevbøger*, 16 March 1646.

direction by day and night. This post was established in the 1620s after an ordinance was issued that required the *Holmens admiral* to keep a register of wind to try and prevent ships from coming to grief through unpredictable weather.<sup>83</sup> In addition to all these documented men there would have been a variety of other workers such as storemen, carters, and stable hands who looked after the horses that were needed to shift heavy materials and the oxen that drove the forges. A muck spreader is mentioned in 1580 and no doubt this task carried on into Christian IV's time.<sup>84</sup> In total it is estimated that in the 1640s there would have been in the region of 70 ancillary staff, excluding the seamen on watch-keeping duties.

### *Prisoners in Bremerholm's Iron*

The last type of worker that was found at the dockyard were the so-called prisoners in Bremerholm's iron. The practice of using prisoners in the royal dockyard dates from as early as 1566 when vagrants were rounded up and sent to work there.<sup>85</sup> This practice was formalised in 1573 when all *lensmænd* and market towns were instructed to send as many vagrants, gypsies, beggars and thieves as possible to Copenhagen.<sup>86</sup> Gradually it became standard practice that all persistent offenders who had been sentenced to death had their sentences commuted to a life's hard labour at Bremerholm. Any further misdemeanour by them would result in their original sentence being carried out at the dockyard gallows.<sup>87</sup>

Criminals could be sentenced to a period of punishment in Bremerholm's iron of anywhere between one and twenty years depending on the nature of their crime. Christian IV himself sometimes decided on the duration of these prisoners' punishments.<sup>88</sup> As a par-

<sup>83</sup> Forordning om orden med de krigsskibe, 6 February 1621, *Corpus Constitutionum Danicæ*, III, 627–8.

<sup>84</sup> Lind, *Fra Kong Frederik den andens tid*, 201.

<sup>85</sup> Fr. Stuckenberg, 'I Bremerholms jern', *Historisk tidsskrift*, (1892), 670.

<sup>86</sup> Missive til Lensmændene og Købstæderne, 13 August 1576, *Corpus Constitutionum Danicæ*, III, 20.

<sup>87</sup> Missives to lensmænd, 24 March 1601 and 18 May 1620, *Corpus Constitutionum Danicæ*, III, 139 & 617.

<sup>88</sup> Details of prisoners, October 1622 and 22 October 1623, *egenhændige Breve*, I, 249–63 & 335–48.



ticularly harsh punishment for Crown servants who had committed a crime against the state, they were fettered to one of the most disreputable prisoners at Bremerholm.<sup>89</sup> Swedish prisoners of war could also find themselves clapped in iron at the dockyard.<sup>90</sup> The practice of condemning vagrants to a life of hard labour also continued well into Christian IV's reign,<sup>91</sup> and an ordinance on begging from 1636 stated that beggars should 'be sent to Bremerholm, to work there in iron or in chains, or on our jagts and galleys'.<sup>92</sup> It was further enshrined in law that anyone found unemployed and refusing to work was to be sent to work in irons.<sup>93</sup>

As the term suggests, all prisoners were bound in iron fetters. One observer noted that 'disobedient and roguish men and vagrants work here with chains and iron on their legs, waist and neck',<sup>94</sup> and depending on the nature of their work they were also sometimes fettered together. Jón Olafsson provides an interesting description of being put into 'Bremerholm's iron':

Thereupon Grabow bade the Provost conduct me to the Island [i.e. Bremerholm] to Master Anders, who was the King's chief smith, and ordered him to fasten an iron ring round my neck, outside my clothes, as was done with several persons. On it, at the nape of my neck, there was a thin iron ring, on which hung a bell of such dimensions that a man with large hands could conceal it inside them.<sup>95</sup>

The total number of prisoners at any one time is hard to judge. The few surviving records show that the number of prisoners sentenced in any given year varied from 14 to 77.<sup>96</sup>

The accounts do not show the total number of prisoners but simply the new ones arriving each year. Of these a fair proportion either died or escaped. The 1642 budget estimate gives a total of 154 prisoners,<sup>97</sup> but by 1646 their number was estimated at only 100.<sup>98</sup> They

<sup>89</sup> Letter to Corfitz Ulfeldt, 21 February 1641, *egenhændige Breve*, V, 22.

<sup>90</sup> Letter to Corfitz Ulfeldt, 28 June 1644, *egenhændige Breve*, V, 480.

<sup>91</sup> Four vagrants sent to Bremerholm, *Kancelliets Brevbøger*, 6 April 1634.

<sup>92</sup> Stuckenberg, 'I Bremerholms jern', 669.

<sup>93</sup> Reces 1643, *Corpus Constitutionum Danicæ*, V, 317.

<sup>94</sup> Stuckenberg, 'I Bremerholms jern', 669.

<sup>95</sup> Bertha S. Phillpotts (Ed.), *The Life of Jón Olafsson*, Vol. I, (Hakluyt Society, Series II, Vol. LIII, 1923), 188.

<sup>96</sup> The number sentenced between 1621 and 1626 were: 53, 77, 48, 36, 36 and 14. Rigsarkiv, Marinearkivet for 1655, 7. Fortegnelser over fanger, 1621–1626.

<sup>97</sup> Chr. Bruun (ed.), 'Kort Overslag over Rigens Indtægt og Udgift 1642', *Danske Samlinger*, 6 (1870–71), 325–47.

<sup>98</sup> Rigsarkiv, Danske Kancelli, B186, Oluf Daas Optegnelsesbog, f. 39–40.

were originally housed in Copenhagen Castle but by 1620 a new prison had to be erected within the dockyard to cope with the growing number of prisoners. This was further enlarged in 1640, suggesting that the number of prisoners steadily increased throughout the reign. They were guarded by six *fangefogeder* (prison warders) but these were prone to corruption, and a payment of only two daler could secure the release of a prisoner.<sup>99</sup>

The prisoners were put to a variety of work in the dockyard, mainly in the forge or the ropewalk, where they carried out the heavy and dirty work such as operating the tread-wheel,<sup>100</sup> shifting materials and tarring cables. They were also used to man the oars of the galleys at sea. They were not, however, restricted only to working at the dockyard and were frequently sent to carry out labouring work at Frederiksborg castle, the Crown gardens, and the arsenal.<sup>101</sup>

### *The Arsenal and Victualling Store*

Although physically part of the naval dockyard complex the arsenal and victualling store operated under separate administrations. The arsenal maintained and supplied weapons and ammunition for both land forces and the navy. It had its own administrative structure and accounts but was governed by the same code of conduct in the *Holm-og arsenalartikler*. In overall charge of the arsenal was the *øverste arkelimester* (senior master gunner). He had responsibility for all personnel associated with the deployment of cannon aboard ships and in the royal castles, while a separate military command structure existed for the deployment of field artillery. He was assisted in the military aspects of his job by three gunnery officers. The *tøjhusskriver* (arsenal clerk) was responsible for the arsenal's accounts. Any guns, ammunition or powder that were issued from the arsenal were recorded and the accounts of ammunition and shot expended were checked when they were returned. The *mønsterskriver* (mustering clerk) was responsible for keeping a register of the men working for the arsenal. The work-

<sup>99</sup> Rigsarkiv, Marinearkivet for 1655, 14. Bremerholms Proviantskrivers Regnskab 1643/44.

<sup>100</sup> Rigsarkiv, Marinearkivet for 1655, 7. Fortegnelser over fanger, 1621.

<sup>101</sup> Rigsarkiv, Marinearkivet for 1655, 7. Fortegnelser over fanger, 1623.

force of the arsenal and the dockyard were interchangeable and the *Holm- og arsenalartikler* stipulated that men were to work in either facility as the need arose.

All gunners and master gunners, who were responsible for firing the cannon, worked under the arsenal's supervision. They could serve with the army or navy as the need arose, although the best gunners were expected to serve at sea. Those that went to sea were also expected to muck in with duties alongside the seamen and were bound by the *skibsartikler*. Those that served in castles or with the army in the field were bound by the *krigsartikler for fodfolk og rytteri* (articles of war for foot soldiers and cavalry).

The administrative relationship between the arsenal and the cannon foundries is unclear. In the sixteenth century the cannon foundry and the powder mill operated as separate entities under the direct control of the king.<sup>102</sup> However, in the *Holm- og arsenalartikler* of 1625 it is clear that the arsenal then supervised the work of the powder mill. No mention is made of cannon foundries in these articles, but it would be strange, even if the arsenal did not directly supervise them, if there was not at least some kind of administrative relationship between the two institutions. The foundries were each managed by one master gunfounder. Claus von Dam's contract in 1639 stated that he was to oversee the work of the foundry in Copenhagen and supply cannon and other goods to Denmark and the duchies, as requested. The cannon were to be cast with great diligence and finished without fault. He was given a small annual wage, paid in German currency, as well as the usual mixture of foodstuffs and clothing. He was also paid 6 Rdlr. for each skippund (160kg) of goods supplied. In addition a certain wastage was allowed between the weight of material supplied and the weight of ordnance delivered, which was in part a perquisite along the same lines as shipwright's chippings.<sup>103</sup> The *stadholder* in Copenhagen was the senior state official who was responsible for the arsenal and cannon foundries, but, as ever, Christian IV also took an active role in their administration. He is known to have personally supervised the testing of cannon and examined the skills of new gunners.<sup>104</sup>

<sup>102</sup> Michael H. Mortensen, *Dansk Artilleri indtil 1600*, (København, 1999), 116–24.

<sup>103</sup> Commission for Claus von Dam, 17 May 1639, *Københavns Diplomatarium*, III, 192.

<sup>104</sup> *Holm- og arsenalartikler*, 248–56; Niels M. Probst, *Christian 4.s flåde*, (København,

The *proviandhus* victualling store administered the issue of all foodstuffs to the navy. It developed as an offshoot of the office of the clerk of Copenhagen Castle, who originally supervised the issue of victuals to both Court and navy. In 1597 a separate official was appointed with the title *proviantskriver paa Bremerholm* to look after the running of the victualling store and supervise the victualling of the navy. Some other Crown servants and employees were issued goods through this office such as military personnel, certain members of the clergy, and Crown factors, but their numbers were not large and the *proviantskriver* could really be considered as a naval official.<sup>105</sup> As we have already seen in Chapter Three, he was responsible for receiving and accounting for all supplies from the crown lands, contracting with merchants for the supply of goods, and supervising all the mills, bakeries, breweries, slaughterhouses and salting works operated by the state. He was responsible jointly to the *Holmens admiral* and to the *rentekammer*, which audited the accounts.

Despite the enormity of this operation the *proviantskriver* was not that well paid, at just 200 KDir. per annum. He had just one assistant clerk and one junior to help with the accounts, and a small workforce of seven or eight workmen to measure, pack and store the foodstuffs.<sup>106</sup> By 1626 it was becoming apparent that the *proviantskriver* could no longer cope with all his duties and a commission was set up to investigate the wording of the terms of office.<sup>107</sup> The number of articles in the *proviantskriver's* commission, and therefore his responsibilities, had almost doubled between 1621 and 1625, so it is hardly surprising that difficulties were experienced. The enquiry did make some changes, but these were minimal, reducing the number of articles from 36 to 34.<sup>108</sup> In 1635, though, a further two clerks were appointed, bringing the total staff to eleven.<sup>109</sup>

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1997), 52–6; Finn Askgaard, *Christian IV, Rigets væbnede arm*, (København, 1988), 91–5.

<sup>105</sup> Lind, *Kong Kristian og hans mænd*, 95.

<sup>106</sup> *Kancelliets Brevbøger*, 4 June 1627.

<sup>107</sup> *Kancelliets Brevbøger*, 13 September 1626.

<sup>108</sup> *Kancelliets Brevbøger*, 16 April 1625; and 4 June 1627.

<sup>109</sup> *Kancelliets Brevbøger*, 5 Dec 1635.

*The Effectiveness of the Dockyard Administration*

The information contained in the commissions of employment provides an insight not just into the various jobs themselves but also the hierarchies within the dockyard. They show that the management structure can be divided into five basic levels. The senior management essentially consisted of only two men, the *Holmens admiral* and the *materialskriver*. Below them, in what would now be called the middle management, were the clerks and master craftsmen. Then came the foremen, the skilled tradesmen and the unskilled workers. Figure 12 is an attempt to show the overall dockyard management structure, as formalised in the 1620s. By drawing up such a rigid organisational chart there is a danger in implying a much more formal management structure than there actually was. The lines of command were not strictly adhered to, and orders regarding the operation of the dockyard were issued by various officials, not least from the king himself, depending on whether certain posts were filled or whether the officials were present at any particular time. The management of the dockyard was therefore very much dependent on personality and circumstance.

Christian IV was the key to the dockyard's effective operation. He was closely involved in all aspects of its running, and dictated orders relating to all manner of activities, from the appointment of senior officials and the building of new ships to petty matters such as the fitting of a new bowsprit or the baking of bread.<sup>110</sup> The king's role in the decade from 1600, when there was neither *rigsadmiral* nor *Holmens admiral*, was especially important. Lind maintains that Christian IV himself took on the responsibility for running Bremerholm, probably with the help of one of the skippers.<sup>111</sup> There is undoubtedly some truth in this. However, the idea that he could have seen to the day-to-day management of what was a huge task, even for someone who had no other duties, is clearly ludicrous. The notion that 'the king himself came daily to Bremerholm, measured and selected

<sup>110</sup> Letter to Breide Rantzau, June/July 1610, *egenhændige Breve*, I, 33–4; Letter to Corfitz Ulfeldt, 27 June 1642, *egenhændige Breve*, VIII, 193–4.

<sup>111</sup> Lind, *Kong Kristian og hans Mænd*, 25–31. Probst suggests that the skipper Niels Svendsen Malmø was in charge as he was referred to as the 'supervisor at Bremerholm'. Probst, *Christian 4.s flåde*, 21.



the timber that should be used himself, oversaw the work, and audited the accounts' is nothing but sheer fantasy.<sup>112</sup>

The precise details of how the dockyard was managed during this period is unclear. Unfortunately the king's letters from this time are sparse and there is not one that mentions naval matters. Even in the protocols of the *Danske Kancelli* there are very few references to the dockyard in this period, and these are directed primarily to individual naval officers or *lensmænd* and mainly concern the supply of materials. It can only be assumed that for ten years the royal dockyard 'muddled through' under the watchful eyes and verbal instructions of the king and the *statholder* in Copenhagen. Most likely the master shipwrights dealt with matters relating directly to ship construction and repair, while the naval officers dealt with the supervision of the seamen, with the *materialskriver* overseeing the finances of both. Things could not continue like this forever, though, and changes were inevitable.

The 1620s mark a critical point in the dockyard's administration. As it became steadily more sophisticated, with the creation of new docks and workshops, strict new guidelines had to be established for working practices within the dockyard. The publication of the much expanded *Holm- og arsenalartikler* in 1625 established a formal code of conduct for the workforce, commissions of appointment were drawn up for the first time for many of the officials and craftsmen, and several new posts, such as the *overskipper*, were created. This may have been at the instigation of Christian IV who was planning his entry into the Thirty Years War and knew that the organisation must be tightened up if he was not going to be present to oversee matters. On the other hand it may simply have been that without Christian IV's direct supervision the dockyard fell into a state of disarray which had to be rectified by introducing tighter controls. In any case the strengthening of the administration was achieved essentially by formalising the existing structure and not through any radical change. The changes were made very much at a lower level and the senior management of the dockyard remained virtually unchanged.

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<sup>112</sup> W. Graah, *Udkast til Danmarks Søekrigshistorie*, (København, 1818), 85–6; H. C. Bering Lisberg further asserted that Christian IV was the first to arrive at the dockyard gates every day (*Christian IV*, (København, 1890–91), II, 115).

It was in the senior management, however, that the problems really existed. The key naval appointment was the *Holmens admiral*. As we have seen he was personally bound to undertake an almost impossible number of tasks without being entirely sure who he was ultimately responsible to, and was without any adequate support from subordinate 'line managers'. Christian IV's indignation at the poor performance of his dockyard admirals is justified in some ways, but he must take some of the blame himself for putting them in such an untenable situation in the first place. It is hardly fair to expect that one official should take sole responsibility for overseeing the work in the dockyards whilst at the same time being continually ordered to sea as a military commander. To be really effective the post required a truly extraordinary man, but experience showed that Christian IV's choices all proved to be decidedly ordinary.

It is interesting to speculate why Christian IV did not do more to improve the management of Bremerholm. His distrust of delegation no doubt played a part, but his knowledge of the English dockyards may also have been an influence. Christian IV had visited the English dockyards in person in 1606 and 1614, and in 1627 an envoy was sent to review English practices.<sup>113</sup> The administration of the English navy was in theory fairly advanced. The Navy Board was established as early as 1545 and had officers responsible for distinct areas of the navy's administration. However, by the early 1600s this administration was crumbling and was soon characterised by bribery, corruption and inefficiency. The Board was disbanded in 1618 and naval administration was placed in the hands of a commission. Certain improvements were made but in 1627, when the Danish envoy was observing, the administration managed to produce 'such a rotten, miserable fleet, set out to sea, no man ever saw'.<sup>114</sup> As a model of reform it was hardly likely to persuade Christian IV to depart from the system that had served him reasonably well until then.

Elsewhere in Europe there were no great examples of dockyard administration from which Christian IV could take inspiration. The

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<sup>113</sup> Michael Oppenheim, *A History of the Administration of the Royal Navy 1509–1660*, (London 1896), 297.

<sup>114</sup> N. A. M. Rodger, *The Safeguard of the Sea: A naval history of Britain 660–1649*, (London, 1997), 363–78.



most famous dockyard, the Venetian Arsenal, had an elaborate administration based on 'worker managers' who operated with a large degree of autonomy and were assisted by an array of sub foremen, assistants, supervisors, and gang bosses. The craft guilds held sway over working practices and any craftsman enrolled onto the books of the Arsenal was guaranteed a wage if they showed up. This allowed old, infirm or lazy shipbuilders to get paid for idling away their days inside the dockyard, drinking their free wine ration. This was clearly not a model on which to base any administrative reform. It worked for Venice, but only because centuries of custom and privilege enabled it to work.<sup>115</sup> None of the other major naval powers such as the Netherlands, France and Spain, had large centralised dockyards at this time. Their naval administrations were fragmented and regionally based and relied heavily on private contractors for the supply of ships and materials.<sup>116</sup>

The dockyard that most resembled Bremerholm's facilities, organisation and administration was Stockholm's Skeppsholm, although it was a little smaller and employed fewer workers. In terms of the different types of craftsmen and their administration the two dockyards were virtually identical. Where Stockholm differed was that under the Swedish administrative reforms of 1634 an Admiralty College was formed which took over responsibility for the upper levels of its administration.<sup>117</sup> This level of delegation was not something that Christian IV would have entertained. He did start to take a less active role in the dockyard's administration for several years after Corfitz Ulfeldt was appointed, but he still kept a close eye on what was going on and was able to state that 'I know the situation well at Bremerholm'.<sup>118</sup> After Ulfeldt's mismanagement was exposed he once more took over direct command.

In fact the existing organisation had a lot going for it. The lower levels of management by the clerks and master craftsmen operated

<sup>115</sup> Robert C. Davis, *Shipbuilders of the Venetian Arsenal: Workers and workplace in the preindustrial city*, (Baltimore, 1991), 78.

<sup>116</sup> Alan James, *The Navy and Government in Early Modern France 1572–1661*, (Woodbridge, 2004); David Goodman, *Spanish Naval Power, 1589–1665: Reconstruction and defeat*, (Cambridge, 1997); Jaap R. Bruijn, *The Dutch Navy of the Seventeenth and Eighteenth Centuries* (Columbia, SC, 1993).

<sup>117</sup> A. Zettersen, *Svenska Flottans Historie, Åren 1522–1634* (Stockholm, 1890), 243–8; *Svenska Flottans Historie, Åren 1635–1680* (Norrtelje, 1903), 151–3.

<sup>118</sup> Letter to Corfitz Ulfeldt, 4 December 1638, *egenhändige Breve*, VIII, 130.

reasonably efficiently, and the *Holm- og arsenalartikler* and the highly detailed commissions governing the workers duties and responsibilities were far in advance of anything known in the English dockyards at that time. Although there was no guarantee that everyone would uphold everything contained in their commission, at least they should all have known their precise role within the dockyard.

The centralisation of the navy and the dockyard in Copenhagen also created a much more efficient organisation than was possible in England or the other maritime powers. England was much more reliant on the import of naval stores and so was to a large extent dependent on private contractors who boosted their own profits by supplying poor materials and short measures. There were dockyards at Deptford, Woolwich, Chatham and Portsmouth, but none had its own ropewalk, sail works or arsenal. In Denmark virtually everything required for the fitting out of ships was manufactured by state employees in one central dockyard, eliminating the need for duplication and significantly reducing the opportunities for corruption. Of course, later in Christian IV's reign he did increasingly rely on private contractors for the supply of warships, which opened up possibilities for large-scale corruption, while in England it was rare for naval ships to be built outside the royal dockyards.

Another significant advantage that the Danish naval administration had over England and Venice was that all employees were paid at least a living wage, and in some cases a very handsome wage indeed, which was regularly reviewed and increased according to the official's seniority and responsibility. In England and Venice wages had failed to keep pace with inflation, tempting officials and workers into abusing the system to supplement their meagre official income, and pilfering and corruption became an accepted practice. Although it could not be eliminated altogether in Denmark, the level of wages did drastically reduce the need for corruption.

However, what had been an adequate naval administration during the early years of Christian IV gradually became inadequate as the size of the navy rapidly expanded. Even though the workload had more than doubled the dockyard administration remained essentially the same as it had been at the start of his reign. Christian IV failed to recognise that impressive ships and dockyards were not enough. Equally as important was an efficient administration that enabled it to be deployed effectively. However, the primary purpose of the naval dockyard was to enable the navy to put to sea every

year and in this it undoubtedly succeeded. The way in which this was achieved, though, was inefficient, outmoded and no longer suited to the large navy created by Christian IV. Having said that, the Danish naval dockyard was far from alone in having a poor administration and was probably less inefficient than many other naval powers.



## CHAPTER EIGHT

### THE ORGANISATION OF THE SEAGOING NAVY

As with the administration of the dockyard, there had to be some kind of organisational system in place if the navy was to function effectively at sea. Rules of discipline had to be encoded and a recognised command structure had to be in place aboard every ship. In addition effective lines of command and a means of communication had to be established when ships sailed together in squadron.

#### *Organisation Aboard Ship*

Naval discipline was governed by the *Skibsartikler* (ships articles). Versions of these regulations had existed since the early sixteenth century and were issued, with minor alterations, to every ship before it set sail, but it was not until 1625 that they were standardised and published.<sup>1</sup> The published version was based on articles drawn up in 1582, but were greatly expanded, both in terms of detail and in the number of articles. All officers and men who boarded the king's ships were to swear an oath of allegiance to the king and the ship, and were bound to uphold the *skibsartikler*. They were published at the same time as the *Holm- og arsenalartikler* and similarly outlined the codes of conduct and the disciplinary procedures, but the *skibsartikler* related specifically to life aboard ship. There were a total of 100 articles, divided into 11 sections: religious observance; allegiances; justice and maltreatment; avoiding coastal hazards; watch-keeping; signalling; fighting conduct; ammunition; prize goods; victualling; and quartering and sickness. Some were directed specifically to certain members of the crew and others were more general in nature, varying from highly serious ones governing the safety of the ship and

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<sup>1</sup> *Skibsartikler*, 8 May 1625, V. A. Secher, *Corpus Constitutionum Daniæ*, (København, 1887–1918), IV, 256–87; F. S. Grove-Stephensen, 'Marine jurisdiktionsforhold før 1660', *Marinehistorisk tidsskrift*, (2/1984), 19–20.

the punishments for mutiny and murder, as well as more petty ones such as prohibitions against complaining to the cook or throwing food overboard, both of which carried the punishment of keel-hauling. In order that the men could forget neither their allegiance nor the heavy punishments for indiscipline the *skibsartikler* were to be read in full to the crew every month or two, depending on the need.

Every warship carried at least one senior officer. The most senior officer commonly serving on a ship was the captain. Apart from the *rigsadmiral* and the *Holmens admiral*, there was no permanent rank of admiral. An admiral was simply a captain who was placed in charge of a squadron of ships, and who still retained the rank of captain aboard his own ship.<sup>2</sup> Officers who were of noble birth were sometimes referred to as *skibsherremænd* (ship's lords),<sup>3</sup> and if the king or *rigsadmiral* put to sea, their ship's captain was usually referred to as the *flagkaptajn* (flag captain). To simplify all these distinctions the officer in command of a ship, whatever his actual rank, was frequently referred to as simply the *skibshøvedsman* (ship's leader).

The captain's role was essentially symbolic, representing and maintaining the authority of the king at sea. He was responsible for carrying out the instructions contained in the ship's sea pass, issued at the start of the voyage, and in battle situations he would be called upon for tactical decisions, but for the most part he had little to do with the actual running of the ship apart from being in charge of discipline. This was similar to the situation in England and Spain where only 'Gentleman Officers' or noblemen had the social status and code of ethics that enabled them to command in war, regardless of any seagoing competence.

All captains received a commission through the *Danske Kancelli* and their ability first had to be attested by the *rigsadmiral*, but this by no means meant that every captain was a competent seaman. In fact a commission could be gained with very little sea experience and, as has been seen, the *rigsadmiral* was not always the most able per-

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<sup>2</sup> This was similar to the situation in England where there were only a small number of high state officials with a formal title of admiral, but captains commanding a fleet, no matter how small, were also referred to as admirals. N. A. M. Rodger, *The Safeguard of the Sea: A naval history of Britain 660–1649*, (London, 1997), 298.

<sup>3</sup> During Christian IV's reign 27 percent of all officers were of noble birth. (H. D. Lind, *Kong Kristian og hans mænd paa Bremerholm*, (København, 1889), 132.)

son to examine competent seamanship. Many of the officers were in fact little more than courtiers whose military obligations took them to sea rather than to the battlefield. There were some officers, though, who saw a career in the navy and started as noble pages, serving as volunteers aboard ship to learn seamanship in what was called the *adelsburs* system.<sup>4</sup> This was outwardly similar to the Midshipman programme instituted by Samuel Pepys in 1686, but it had none of the rigorous training and promotion associated with the English system. A few well-trained captains did filter through, but the system was so irregular that it had little real impact.

In contrast to army captains, who received a commission that specifically stated their position in the army, naval captains were usually appointed as 'Kaptajn til Lands og til Vands' (captain on land and at sea).<sup>5</sup> This apparently confirms that officers were not necessarily specialists in naval affairs, but this rather confusing terminology may simply have meant that naval captains were also expected to serve at Bremerholm when not actually at sea. A typical commission for a ship's captain also stated that they were appointed 'for service on land and sea, where the king commands'.<sup>6</sup> On larger ships the captain would have one or more lieutenants, depending on the size of ship.<sup>7</sup> Lieutenants were also frequently given command of smaller ships. Unlike captains, the lieutenants' commissions were specifically related to service at sea, using the terminology of 'løjtnant til skibs' (ship's lieutenant).<sup>8</sup>

Compared to many state employees, the senior officers' commissions were very concise. They were also very imprecise. They simply bound themselves to serve at the king's discretion and by 1645 it was realised that these obligations were so vague and open to abuse that new regulations needed to be introduced. An ordinance summed up the situation thus:

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<sup>4</sup> R. Steen Steensen, 'Søværnets Officerskole', in Steensen (ed.), *Flåden gennem 475 år*, (København, 1961), 428.

<sup>5</sup> For example, Jens Vognsen's commission, *Kancelliets Brevbøger*, 23 February 1625.

<sup>6</sup> *Kancelliets Brevbøger*, 5 February 1628.

<sup>7</sup> The class of lieutenant seems to have been formally introduced in 1578 although they were mentioned when the admiralty guild was formed in 1558. H. D. Lind, *Fra Kong Frederik den andens tid: Bidrag til den dansk-norske sømagts historie 1559–1588*, (København, 1902), 194; Jørgen H. Barfod, *Christian 3.s flåde*, (København, 1995), 125.

<sup>8</sup> Commission for Frants v. Stenwinckel, *Kancelliets Brevbøger*, 10 April 1631.

Since we find that our sea captains and lieutenants undertake little or no supervision of our navy, or of their junior officers in our ships, as they are expected, each ought to answer for himself why everything usually stands in disorder, even though we specifically have captains and lieutenants in our service for this purpose.<sup>9</sup>

A set of regulations governing their role and conduct was then outlined to try and remedy this. It was stipulated that captains and lieutenants should be familiar with all aspects of the running of a ship and were to oversee everything aboard their ship and ensure that everything concerning it and its men was in order. They were to take ultimate responsibility for the ship's safety and ensure that the hull was correctly ballasted and kept watertight; that the rigging was correctly rigged and all running gear was kept greased; and that the cannon were kept in good order and ready for use. They were to sail the correct course, as instructed, and only use those harbours that were suitable for their ship. They also held responsibility for law and order among the crew and were to ensure that all victuals were of the correct standard and measure. In addition all captains and lieutenants were to meet at Bremerholm every spring so that their precise duties for the coming year could be assigned by the *Holmens admiral*. It is significant that these regulations were introduced in the aftermath of the navy's poor record in the Torstensson War, during which Christian IV complained that his officers were incompetent and were putting the state's sea power at risk.<sup>10</sup> The noble captains were the worst and there seems to have been some ill feeling between them and the other captains. There is evidence of one who 'spoke the truth about the noble captains' who was promptly condemned to a month in Bremerholm's iron.<sup>11</sup>

The effects of the new regulations, however, were not immediately felt and the incompetence shown by Ove Gjedde as *rigsadmiral* in wrecking his flagship did not prove a good role model for his officers. The new regulations were really of little use unless effective training was provided for the education of officers. There had been no official teacher in navigation at the dockyard for over twenty

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<sup>9</sup> Ordinans for skibskaptejnernes forhold, 10 May 1645, *Corpus Constitutionum Daniæ*, IV, 455–8.

<sup>10</sup> Letters to Corfitz Ulfeldt, 14 & 26 July 1644, C. F. Bricka & J. A. Fredericia (eds.), *Kong Christian den Fjerdtes egenhændige Breve*, V, 484–5 & 487–9.

<sup>11</sup> Niels M. Probst, *Christian 4.s flåde*, (København, 1996), 24.



years and even when a new navigation school was established in 1647 it was aimed at teaching those boys intending to become junior officers rather than captains and lieutenants. It is little wonder that the majority of senior officers in Christian IV's navy were of such a poor standard.

Soldiers serving aboard the warships also had their own senior officers. The *kaptajn over soldatterne* (captain of soldiers) was the most senior, and there could also be a *løjtnant til lands* (lieutenant of land troops) aboard the ship. In the event of there being no captain then the most senior lieutenant was termed the *kaptajnløjtnant* (lieutenant-captain).<sup>12</sup> These officers had no responsibility for the running of the ship and were simply responsible for the command of the seagoing soldiers.

Despite Christian IV's distrust of guilds, the officers had their own admiralty guild. This was established in 1558 but little is known of its history. The guild had a set of rules and regulations governing the conduct of its brethren, but the only references relating to it concern the provision of alcohol, suggesting that its main purpose was that of a drinking club. It was traditionally presented two barrels of beer by Copenhagen Castle at Christmas, and in 1642 it requested the waiving of excise on a last of beer. In that year its members numbered 300, consisting not only of ships' captains and lieutenants but also skippers and other junior officers.<sup>13</sup> There was also a *skipperlav* (skippers guild) for commercial seamen, to which some naval officers also belonged.<sup>14</sup>

The ships' junior officers were equivalent to the English warrant and petty officers. The most important of these was the skipper, who was in absolute control of the running of the ship and was responsible for its good repair and seaworthiness. A skipper could also occasionally be put in command of smaller warships and was generally the highest rank aboard the royal transport ships. The skipper's duties were well established by tradition, but by 1625 it was noted that:

<sup>12</sup> Skibsartikler, 280.

<sup>13</sup> Letter from Admiralitetslav, 27 November 1642, Rigsarkiv, Danske Kancelli, B160, Indlæg til registre og tegnelser.

<sup>14</sup> Lind, *Fra Kong Frederik den andens tid*, 187 & 242; H. D. Lind, *Kong Frederik den Tredjes sømagt: det dansk-norske søværns historie 1648-1670*, (København, 1896), 16-7.

we daily experience great incompetence in our navy's ships and dockyard due to the fact that the skippers either do not comply with their pledged commission diligently enough or they really do not fully understand it.<sup>15</sup>

A formal commission was then drawn up to clarify the skipper's responsibilities in an effort to improve matters. This stated that they were to be responsible for all of the ship's equipment and were to keep an inventory of everything that belonged to the ship, from anchor cables down to nails and bolts. In addition a register was also to be kept of everything issued annually from the dockyard, such as flags, compasses and lights. They were also responsible for preserving the soundness of the ship's timbers by keeping everything clean and the ship well ballasted. Skippers were to supervise the quartering of men to ensure that the less experienced could learn from their shipmates and also to supervise the intake and distribution of victuals. They were also expected to be present when buoys were laid so that they could learn the shipping lanes, and were also to sail at least once every two or three years into the eastern Baltic so that they could operate there in times of emergency without a pilot. The skipper's commission therefore overlapped to a large extent with the captain's, but while the captain merely took on the responsibility for certain provisions, the skipper, it seems, directly supervised the work.

Alongside the skipper sailed the *styrmand* (steersman) who navigated the ship. They were also used as pilots and were specially recruited from all areas of Denmark-Norway to ensure that the fleet could navigate safely through any of the home waters. The *styrmand* was assisted by the quartermasters, who were promoted from the rank of seaman to physically steer the ship. The *højbådsmand* (boatswain) supervised the work of the seamen. The ship's captain was ultimately responsible for discipline aboard ship, but the *skibsprøfos* (naval provost) and his staff actually policed the men and dealt out any punishments.

The *skibsskriver* (purser) was responsible for keeping a muster roll of all men aboard the ship, and the amount of wages and victuals issued to them. He inventoried any cargo that was carried and he also kept a log of any disciplinary actions that were administered

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<sup>15</sup> Instruks for skipperne i kongens tjeneste, 29 April 1625, *Corpus Constitutionum Daniæ*, IV, 217–26.

during the voyage. If there was no chaplain aboard the ship then the purser was to read the gospels to the men in his stead.<sup>16</sup> He was assisted by the *skibmænd* (shipmen or holdsmen) who were responsible for the stowage of all materials in the hold of the ship. The *arke-limester* (master gunner), sometimes also referred to as the *konstabel* (constable), supervised the gunners. In conjunction with the ship's captain, he kept an inventory of all cannon and small arms aboard the ship, and was responsible for issuing powder and ammunition.<sup>17</sup>

There were three classes of men aboard a ship: seamen; gunners; and soldiers. Each had their own distinct function, although there was some element of overlap in their duties. *Båds mænd* (seamen) were those men who carried out all tasks to do with the running of the ship, such as hauling cables and setting sails. As soon as they went aboard ship they were divided into starboard and larboard watches. Each watch was then further divided into messes of five, six or eight men. Within each mess there were always to be a number of experienced seamen who could teach the less experienced in the arts of seamanship. The most senior seaman in the mess was called the *rodemester* (mess master).<sup>18</sup> *Bøsseskytter* (gunners) operated the ship's cannon. As they were expected to serve on land as well as at sea not all gunners were necessarily expert in naval gunnery. In 1629 Christian IV attempted to rectify this and issued instructions to improve their seagoing skills. They were to be drilled in tasks such as loading cannon when aboard ship, elevating them when the ship is heeling, and running them in and out of the gun ports.<sup>19</sup> The ratio of gunners to seamen was at first not great as the cannon, once run out, stayed out and were loaded from outboard. This changed in the 1640s as inboard loading was introduced, and greater numbers of men were needed to haul the guns in and out for every shot.<sup>20</sup>

Soldiers were similarly not specifically trained to fight at sea. They were simply a section of the army who were assigned to duty aboard the king's ships, rather than his forts or battlefields.<sup>21</sup> They were not

<sup>16</sup> Lind, *Kong Kristian og hans mænd*, 356–7; Skibsartikler, 257.

<sup>17</sup> Holm- og arsenalartikler, 8 May 1625, *Corpus Constitutionum Danicæ*, IV, 249.

<sup>18</sup> Skibsartikler, 260–1.

<sup>19</sup> Letter to Hertug Frederik, Hertug Ulrik and Thomas Nold, 24 January 1629, *egenhændige Breve*, II, 174.

<sup>20</sup> Preben Holck, 'Outboard Loading', *Mariner's Mirror*, 17 (1931), 282–3.

<sup>21</sup> Missive to Falcke Lykke, *Kancelliets Brevbøger*, 9 March 1637.

entered in the navy's books and were paid through the army's own administration. In battle they fought with small arms and were the main force when enemy ships were boarded. The gunners and soldiers were known collectively as *krigsfolk* (war men) and in times of war they received their orders directly from their own senior and junior officers, such as sergeants and corporals. However, when they were not engaged in either battle drills or actual fighting, they were expected to assist the seamen in the less skilled aspects of running the ship, such as manning the pumps, and were directed by the ship's officers.<sup>22</sup> Although the work of the different classes of men were specialised, the boundaries between them was still fairly flexible. Seamen were sometimes temporarily designated as gunners and if there were not enough seamen to man the ships then gunners could be used instead.<sup>23</sup> All men, whether they were seamen, gunners or soldiers were also expected to participate as watch-keepers.

In addition to those men already described there were a number of other junior officers and men aboard a ship such as junior officers' mates, surgeons and cooks, as well as craftsmen such as carpenters and sail makers, who kept the ship in good repair whilst at sea. Table 4 shows as near a complete list of crew members as possible, with their pay and the ideal number of men aboard the three main classes of warship.<sup>24</sup> Some designations that are mentioned from time to time are imprecise, for instance the naval provost's assistants, watch keepers and mess masters were probably just seamen and soldiers who were appointed to these particular duties for the duration of the voyage, and were not really a formal rank. For the sake of clarity these have been omitted from the table. In addition to the crew members listed here, the king also carried a retinue of around 40 servants, cooks, and medics for himself and his mistress when he set sail in one of the larger ships.<sup>25</sup>

It is not easy to establish exactly which ranks held precedence over others aboard the ship. The crew's wages give some indication of the seniority of ranks aboard the ship, but the rules for the dis-

<sup>22</sup> Skibsartikler, 261.

<sup>23</sup> Rigsarkiv, Rentekammer Udgift Conto I.a., Klædekammer regnskaber, 1626/27, f. 194; Letter to Corfitz Ulfeldt, 25 January 1643, *egenhændige Breve*, V, 291–2.

<sup>24</sup> Letter to *rentemestre*, March 1633, *egenhændige Breve*, III, 95–6.

<sup>25</sup> Letter to Corfitz Ulfeldt, 7 January 1644, *egenhændige Breve*, V, 433–5.

Table 4. *Typical Ship's Complement in the 1620s*

| Rank                            | English equivalent     | Wages (Kdlr.) | No. of Men    |                |               |
|---------------------------------|------------------------|---------------|---------------|----------------|---------------|
|                                 |                        |               | Large Warship | Medium Warship | Small Warship |
| <b>Overofficere</b>             | <b>Senior Officers</b> |               |               |                |               |
| <i>Kaptajn</i>                  | Captain                | 200–400       | 1             | 1              | 0             |
| <i>Løjtnant</i>                 | Lieutenant             | 150–200       | 2             | 1              | 0             |
| <i>Kaptajn over soldatterne</i> | Army Captain           | ?             | 1(?)          | 1(?)           | 0(?)          |
| <i>Løjtnant til lands</i>       | Army Lieutenant        | ?             | 1(?)          | 0(?)           | 1(?)          |
| <b>Underofficere</b>            | <b>Junior Officers</b> |               |               |                |               |
| <i>Skipper</i>                  | Master                 | 30–100        | 1             | 1              | 1             |
| <i>Underskipper</i>             | Master's Mate          | 40            | 2             | 1              | 1             |
| <i>Styrmand</i>                 | Steersman              | 24–300        | 4             | 2              | 1             |
| <i>Højbådsmand</i>              | Boatswain              | 34–38         | 1             | 1              | 1             |
| <i>Højbådsmands Mat</i>         | Boatswain's Mate       | 20–25         | 3             | 1              | 1             |
| <i>Arkelimester</i>             | Master Gunner          | 24            | 1             | 1              | 1             |
| <i>Arkelimesters Mat</i>        | Master Gunner's Mate   | ?             | 1             | 1              | 1             |
| <i>Skibmand</i>                 | Holdsmen               | 34–38         | 4             | 2              | 2             |
| <i>Skibmands Mat</i>            | Holdsmen's Mate        | 20–25         | 4             | 2              | 2             |
| <i>Trompeter*</i>               | Trumpeter              | 24            | 3             | 1              | 0             |
| <i>Skibsskriver</i>             | Purser                 | 34–38         | 1             | 1              | 1             |
| <i>Bartskærer</i>               | Barber Surgeon         | 12–15         | 1             | 1              | 1             |
| <i>Bartskæredreng</i>           | Surgeon's Boy          | ?             | 1             | 0              | 0             |
| <i>Skibspræst</i>               | Chaplain               | 100–130       | 1             | 0              | 0             |
| <i>Skibspræstdreng</i>          | Chaplain's Boy         | ?             | 1             | 0              | 0             |
| <i>Skibs Profos</i>             | Naval Provost          | 23–28         | 1(?)          | 1(?)           | 0(?)          |
| <i>Kvartermester</i>            | Quartermaster          | 60–120        | 4             | 2              | 2             |
| <b>Mænd</b>                     | <b>Men</b>             |               |               |                |               |
| <i>Bådsmand</i>                 | Seaman                 | 12–15         | 130           | 60             | 30            |
| <i>Bøsseskytter</i>             | Gunner                 | 36–84         | 30            | 15             | 8             |
| <i>Soldater</i>                 | Soldiers               | ?             | 100           | 40             | 30            |
| <i>Tømmermand</i>               | Carpenter              | 60–72         | 4             | 2              | 1             |
| <i>Sejllægger</i>               | Sailmaker              | 17–23         | 2             | 1              | 0             |
| <i>Bødker</i>                   | Cooper                 | 17–23         | 1             | 1              | 0             |
| <i>Kök</i>                      | Cook                   | 15            | 1             | 1              | 1             |
| <i>Kældersvend</i>              | Steward                | 15            | 1             | 1              | 0             |
| <i>Trommeslager</i>             | Drummer                | 12            | 1             | 1              | 1             |
| <i>Pokkerdreng</i>              | Ship's Boys            | 0             | 8(?)          | 6(?)           | 0(?)          |
| <b>TOTAL</b>                    |                        |               | <b>312</b>    | <b>146</b>     | <b>85</b>     |

\* Trumpeters could be substituted by pipers or shawm players.

Sources: Skibsartikler, 8 May 1625, *Corpus Constitutionum Danie*, IV, 257–87; Missive to *rentemestre*, *Kancelliets Brevbøger*, 19 February 1625; Letter to *rentemestre*, March 1633, *egenhændige Breve*, III, 95–6; Rigsarkiv, Rentekammer Udgift Konto I.a., Klædekammer regnskaber.

Table 5. *Prize Shares for Ships' Crew Members*

| Rank                                                                                                                     | Prize Share                        |
|--------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Ships Captain                                                                                                            | 12                                 |
| Captain of soldiers                                                                                                      | 11                                 |
| Lieutenant-Captain                                                                                                       | 10                                 |
| Naval Lieutenant                                                                                                         | 9                                  |
| Army Lieutenant                                                                                                          | 8                                  |
| Skippers, sergeants & under skippers                                                                                     | 7                                  |
| Steersmen, master gunners & boatswains                                                                                   | 6                                  |
| Pursers, holdsmen & quartermasters                                                                                       | 5                                  |
| Mess masters, corporals, gunners, naval provosts,<br><i>adelsburs</i> , cooks, stewards & the most experienced<br>seamen | 4                                  |
| Soldiers & ordinary seamen                                                                                               | 3                                  |
| Ship's boys                                                                                                              | 1 <sup>1</sup> / <sub>2</sub> or 2 |

Source: Skibsartikler, 8 May 1625, *Corpus Constitutionum Daniæ*, IV, 280.

tribution of prize money provide further evidence. Table 5 shows the number of shares that each man was entitled to. We also know that the chaplains and the barber-surgeons were to mess with the skipper, while the pilots and trumpeters were to mess with the boatswains.<sup>26</sup>

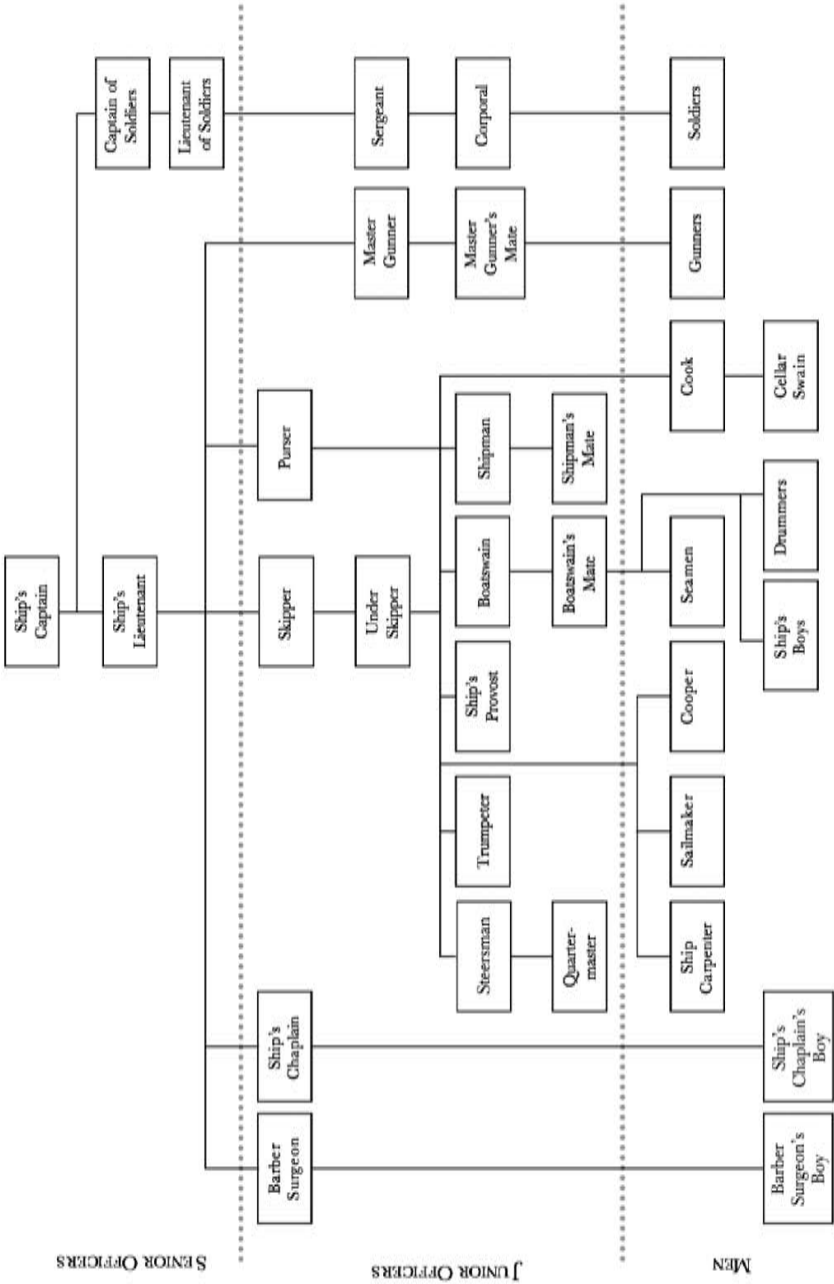
It is therefore possible to construct a conjectural organisational chart for a ship's command structure. The structure shown in Figure 13 shows just one interpretation for one of the larger ships, and may well be incorrect in certain minor details. As with the dockyard management chart there is a danger of implying a far greater degree of formal organisation than was actually the case. However, it is given simply in an attempt to show how the different crew members inter-related, and ought not to be taken as a definitive formal ship-board organisational structure.

### *Naval Recruitment*

The conscription and recruitment of seamen was a vital element in the organisation of the seagoing navy. The navy had a core of around

<sup>26</sup> Missive to Sten Villumsen, *Kancelliets Brevbøger*, 11 September 1623.

Fig. 13. *Ship Command Structure*



600 permanently employed seamen and these were then supplemented by a variable number of men who were conscripted to serve a fixed term.<sup>27</sup> Christian IV himself issued the orders for these men to be raised. Their number ranged from just a few dozen in the early years to many hundreds from the 1620s onwards, although in times of conflict the figure could rise to as high as 1400.<sup>28</sup> Table 6 shows the number of *bådsmand* who were to be recruited, as noted in the protocols of the *Danske Kancelli* and in Christian IV's letters. Although orders for the recruitment of seamen were not recorded every year, it must be assumed that men were recruited in all the intervening years as well, since large numbers continued to be discharged every year after their regulation period of service, initially set at five years.<sup>29</sup>

The men were conscripted or recruited predominantly from the *len*, with each *lensmand* being asked to provide a prescribed number of men. They were restricted in the types of men they supplied and the following were exempt: those who had a wife and children; only sons working for their mothers; farmers who were listed as soldiers; those who owned their own or part of a ship; town dwellers with steady occupations; those already in service in Spanish Company ships; and all those who had royal exemptions. Naturally, experienced seamen were preferred although only one man was to be taken from each merchant ship if possible, and only in severe circumstances were fishermen to be taken.<sup>30</sup> The harbour towns were also expected to supply an annual quota of seamen, but from 1631 the payment of the *bådsmandshvervningskat* (recruitment of seamen tax) exempted them from this obligation.<sup>31</sup>

Although Denmark did not employ the press gang to fill her ships, as in England, the men taken from the *len* and coastal towns were still essentially conscripted men. Impressment in England had its origin in medieval feudal service, and this was precisely the situation in Denmark-Norway, where the local lords and burgomasters were

<sup>27</sup> Probst, *Christian 4.s flåde*, 28.

<sup>28</sup> Open letter, *Kancelliets Brevbøger*, 2 January 1628; and Letter to *rentemestre*, 13 February 1635, *egenhændige Breve*, III, 333–4.

<sup>29</sup> *Kancelliets Brevbøger*, 12 December 1620, 12 December 1621, 24 January 1626, & 7 February 1627.

<sup>30</sup> Missives to *lensmænd*, *Kancelliets Brevbøger*, 5 and 25 February 1624.

<sup>31</sup> Missive to *lensmænd*, *Kancelliets Brevbøger*, 31 January 1631.



Table 6. *Conscription or Recruitment of Seamen*

| Year | No. of Seamen to be Recruited |
|------|-------------------------------|
| 1596 | Unspecified number            |
| 1601 | 46                            |
| 1606 | 875                           |
| 1609 | As many as possible           |
| 1610 | 199                           |
| 1612 | As many as possible           |
| 1613 | As many as possible           |
| 1616 | As many as possible           |
| 1618 | 411                           |
| 1619 | As many as possible           |
| 1622 | 400                           |
| 1624 | 856                           |
| 1627 | 160                           |
| 1628 | 1400                          |
| 1629 | 376                           |
| 1630 | 411                           |
| 1631 | 403                           |
| 1632 | 10                            |
| 1633 | 50                            |
| 1635 | 1400                          |
| 1639 | 330                           |
| 1640 | 400                           |
| 1642 | 300                           |
| 1644 | 540                           |
| 1645 | 650                           |

Sources: *Kancelliets Brevbøger*; *egenhændige Breve*; *Corpus Constitutionum Daniæ*

required to provide their master with a certain quota of men in return for their own privileges. Not all seamen, of course, were forced into the navy and there must have been a fair number of volunteers, although it would be impossible to determine the proportion of conscripts to volunteers. In some years captains were sent out to recruit seamen in addition to those supplied from the *len*. It was not always possible to give specific numbers of men to be recruited so the captains were simply instructed to raise as many men as possible.<sup>32</sup>

<sup>32</sup> For example in 1616 three captains were sent out in January to recruit as many seamen as possible, who were then to muster at Copenhagen by Easter. *Kancelliets Brevbøger*, 9 January 1616.

Sometimes the *lensmænd* were also asked to assist the captains with their recruiting, although this must have impinged on their ability to supply their own quota.

As the navy could only sail during the summer months there was a problem about what to do with all the seamen that were in the king's service when they were not at sea. The traditional solution was to station men in towns all over the realm, in what was known as *borgeleje* (town billeting), where they were given free lodging and victuals, or a cash equivalent. There was naturally a tendency for men to try and escape their duty, and in an effort to avoid desertion weekly musters were held in each town and their week's food money was paid out only at that time.<sup>33</sup> This arrangement was far from satisfactory and the system was open to corruption. Desertion remained a serious problem and some men who were on the seamen's register never actually turned up for duty at Bremerholm during their entire lives. This system also had another inherent problem in that in order for seamen to get to Copenhagen safely the navy needed to be in a position to protect them, leading to the paradox that in order to mobilise the navy to control the sea, Denmark already needed to control the sea. In 1616 it was therefore stipulated that once men had been recruited to the navy they must remain in constant service for a period of five years before being allowed to return home.<sup>34</sup> From this time the majority of men who did not remain aboard their ships in the winter months were either housed in barracks at Bremerholm or were billeted in Copenhagen or the surrounding area.

Table 7 shows the total number of officers and men serving in the navy during the summer months. The seasonal nature of the navy's operations meant that a large number of seamen were taken on temporarily for the summer months only. These men were paid monthly and were known as *månedstjenere* (monthly servants). In winter the number of seamen was reduced to only about 60 percent of these figures. It is not known what the temporary seamen did dur-

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<sup>33</sup> Open letter to towns, 6 April 1581, *Corpus Constitutionum Danicæ*, III, 206–8; Open letter to town burgomasters, 24 October 1587, *Corpus Constitutionum Danicæ*, III, 481–4; Open letter to *baadsmænd* and *bosseskytter*, 24 October 1587, *Corpus Constitutionum Danicæ*, III, 484–5.

<sup>34</sup> Open letter on *bådsmænd* and *bosseskytter*, 4 July 1616, *Corpus Constitutionum Danicæ*, III, 481–3.

Table 7. *Total Number of Officers and Men engaged in the Summer Months*

|                                              | 1620        | 1630        | 1640        |
|----------------------------------------------|-------------|-------------|-------------|
| Captains & lieutenants                       | 22          | 36          | 62          |
| Skippers                                     | 50          | 78          | 88          |
| Steersmen                                    | 54          | 59          | 80          |
| Junior officers, mates & other special ranks | 84          | 407         | 610         |
| Surgeons                                     | 10          | 3           | 27          |
| Trumpeters                                   | 8           | 10          | 19          |
| Master gunners & gunners                     | 289         | 448         | 580         |
| Seamen                                       | 761         | 2343        | 2460        |
| Ships' boys                                  | 100         | 115         | 170         |
| <b>Total</b>                                 | <b>1378</b> | <b>3499</b> | <b>4096</b> |

Sources: Rigsarkiv, Rentekammer Udgift Conto I.a., Klædekammer regnskaber, 1620/21; 1630/31; 1640/41.

ing the winter months, or whether the same men were recruited year after year. Gunners were retained all year round and returned to the arsenal for service during the winter.

The massive increase in the number of seamen between 1620 and 1630 highlights the rapid development of the navy during the later stages of the *Kejserkrig*. This increase was achieved not only by the recruitment drives shown in Table 6 but also by increasing the standard length of service from five to eight years.<sup>35</sup> The peak years came during the Torstensson War when apparently nearly 5000 officers and men were engaged.<sup>36</sup> The number of men fell again in the late 1640s after the fleet was decimated, and when Christian IV called for the number of men to be reduced as a cost cutting measure.<sup>37</sup> Even before the war, though, he was calling for a reduction in the number of officers.<sup>38</sup> By 1648 the total number of officers and men had been reduced to only around 1600.<sup>39</sup>

There does not seem to have been any real problem in obtaining the necessary number of men to serve in the navy. Apart from understandable problems experienced during wartime there are very

<sup>35</sup> *Kancelliets Brevbøger*, 24 January 1626.

<sup>36</sup> Lind, *Kong Frederik den Tredjes sømagt*, 3.

<sup>37</sup> Letter to Corfitz Ulfeldt, 8 January 1648, *egenhændige Breve*, VIII, 408–9.

<sup>38</sup> Letter to Corfitz Ulfeldt, 19 May 1642, *egenhændige Breve*, VIII, 174–5.

<sup>39</sup> Lind, *Kong Frederik den Tredjes sømagt*, 23.

few references to difficulties in recruiting seamen in the protocols of the *Danske Kancelli* or in the king's letters. If a tax was able to be introduced as an alternative to coastal towns supplying men then it would tend to suggest that enough seamen were readily recruited from the *len*. The fact that the period of service was limited to only five or eight years,<sup>40</sup> as opposed to the indefinite service practised in England, and because men could expect regular food and wages, must have made service in the Danish navy a much less daunting proposition. Frederik II made sure that his seamen were better fed, clothed and paid than under any previous monarch,<sup>41</sup> and Christian IV continued this policy. Even when state funds were low in the 1630s and 1640s, and doubts were raised over the ability to pay the men, Christian IV's benevolence towards his seamen ensured that the money was usually found from somewhere. He also founded three hospitals in 1616 for invalid seamen at Roskilde, Slagelse and Helsingør.<sup>42</sup> It was not until the severe penury following the Torstensson War that major problems were encountered. In 1647 seamen were only paid if they actually went to sea, with the rest remaining unpaid. Not surprisingly desertion then became an issue.<sup>43</sup> In the early years of Frederik III's reign seamen regularly found themselves being paid short wages and issued with insufficient clothes and rations. If difficulties were encountered, particularly during wartime, then men were recruited from England, Scotland, Germany and the Netherlands. Seamen of all nationalities sailing through the Sound were also pressed into service for a limited time.

### *The Organisation of the Fleet at Sea*

When the navy put to sea there had to be a recognised line of command between the different ships. The organisation of the fleet and its division into squadrons was personally controlled by Christian IV who, every spring, would issue an instruction detailing which ships

<sup>40</sup> Men could be re-conscripted, though, in times of war. Open letter on seamen and gunners, 4 July 1616, *Corpus Constitutionum Daniæ*, III, 481–3.

<sup>41</sup> Lind, *Fra kong Frederik den andens tid*, 229.

<sup>42</sup> Open letter on seamen and gunners, 4 July 1616, *Corpus Constitutionum Daniæ*, III, 481–2.

<sup>43</sup> Probst, *Christian IV.s flåde*, 267.

should be mobilised and where they should sail.<sup>44</sup> Before each ship set sail its captain would receive a *søpas* (sea pass) from the *Danske Kancelli* detailing his orders and where he was to sail.<sup>45</sup> Depending on the nature of the mission, the ships either sailed individually or in squadrons and, in the event of war, the fleet as a whole could sail together.

In peacetime these instructions generally allowed the captains to act on their own initiative as the sea pass often vaguely stated that they were to keep the seas clear of pirates and prevent any illegal trade. In wartime the situation was different and the actions of the senior officers were more tightly controlled as Christian IV tended to make most of the tactical and strategic decisions. This was a relatively easy process when he was sailing with the fleet, particularly when he was officially in command, such as during the First Battle of Lister Dyb in 1644 when he held the rank of admiral of the squadron. At other times he made sure that operations were carried out to his specifications, seen most lucidly during the attack against Hamburg in 1630 when the newly appointed *rigsadmiral* Klaus Daa was nominally in charge, but the steady stream of instructions from the king left him in no doubt as to what he should do. When Christian IV was not sailing with the fleet his instructions relating to the navy's operations were issued to the nearest suitable official. For example, during the Kalmar War, when he was with the army rather than the navy, he issued a number of instructions relating to the Kalmar fleet to Anders Sinklar, the commander of the captured Kalmar Castle.<sup>46</sup>

When a squadron of ships set sail it was commanded by the most senior captain who was given the title of admiral. Larger squadrons also had an under admiral. When the entire fleet went into action it would typically be divided into four separate squadrons. The first led by a general admiral, the second by a vice general admiral and the third and fourth were each led by a *kwartaladmiral* (quarter, or rear, admiral). Each squadron also had its own under admiral. When

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<sup>44</sup> For example: Fleet list March/April 1628?, *egenhændige Breve*, VII, 45–8; and letters to Claus Daa, 6 December 1635 & 31 March 1640, *egenhændige Breve*, III, 451–4 & IV, 321–2.

<sup>45</sup> For example: *Søpas* for Hendrik Vind aboard *Rytteren*, *Kancelliets Brevbøger*, 1 May 1626.

<sup>46</sup> Letters to Anders Sinklar, 21 October 1611, 10 November, 1611 and 5 April 1612, *egenhændige Breve*, I.

sailing into battle the squadrons were organised into intricate formations. The admiral ship headed the formation, supported by two smaller ships, creating a wedge shaped pattern. The underadmiral and another two ships then followed behind in another wedge. The supporting small ships and galleys then followed up at the rear.<sup>47</sup> This type of formation was unwieldy, particularly in confined areas or heavy seas, but had gained acceptance through years of usage.<sup>48</sup> It was in fact impossible to maintain after the initial attack and any battle would soon degenerate into a confused mêlée. This is what happened during the attack against the Hamburg fleet in 1630. Initially a rigid formation was tried but Christian IV quickly realised that the Elbe was hardly the place for intricate manoeuvres and his plan of attack was altered so that each ship was instead detailed to attack a specific Hamburg ship.<sup>49</sup> This approach proved much more effective and the battle was quickly settled. However, it did not prevent similar intricate formations being tried again in 1640, when the fleet was mobilised in preparation for a potential attack from the Netherlands, and in the Battle of Kolberger Heide in 1644.<sup>50</sup> These manoeuvres make more sense when we look at naval tactics of the time, which was constrained by a number of factors, not least the practice of loading cannon from outboard. The wedge formation had been a standard Scandinavian tactic since the Nordic Seven Years War. The English and Dutch also used small squadrons of ships to sail by their enemy and discharge their guns one at a time before retiring to reload. It was not until the mid to late seventeenth century that Denmark, in line with the other European navies, adopted the full broadside attack and the line-ahead battle formation.<sup>51</sup>

Communication between ships was effected using a system of signal flags, cannon shots and lanterns. During the Nordic Seven Years

<sup>47</sup> Finn Askgaard, *Christian IV, Rigets væbnede arm*, (København, 1988), 64–7.

<sup>48</sup> Niels Probst, 'Nordisk søtaktik i 1500- og 1600-tallet- og slaget i Køge Bugt den 1. juli 1677', *Marinehistorisk tidsskrift*, (4/1992), 3–23.

<sup>49</sup> Battle plans, 24 Aug 1630, *egenhændige Breve*, II, 282–4.

<sup>50</sup> Battle plan, 7 May 1640, *egenhændige Breve*, IV, 333–6; Chr. Bruun, *Slaget paa Kolberger Heide den 1 juli 1644*, (København, 1879), Probst, *Christian 4.s flåde*, 234–40.

<sup>51</sup> Brian Lavery, 'The Revolution in Naval Tactics', in Martine Acerra, Jos, Merino and Jean Meyer (eds), *Les Mairines de guerre européennes, XVII<sup>e</sup>–XVIII<sup>e</sup> siècles*, (Paris, 1985), 167–72; M. A. J. Palmer, 'The Military Revolution Afloat: the Era of the Anglo-Dutch Wars and the Transition to Modern Warfare at Sea', *War in History*, 4, (1997), 123–33; Jan Glete, *Warfare at Sea, 1500–1650*, (London, 2000), 35–9.

War the admiral Herluf Trolle outlined his own codes that covered basic signals such as a cannon shot to indicate that the admiral's ship was getting under way or anchoring.<sup>52</sup> Such signals were fairly simple and most likely used time and again, but they were not formally adopted as standard. Even when the revised *skibsartikler* were published in 1625 only one article was devoted to signalling and this stated simply that the admiral should have his captains aboard before sailing to detail the particular signals that he would use.<sup>53</sup> This was similar to the situation in England, but at least there some signals had become standardised.<sup>54</sup>

### *The Effectiveness of the Seagoing Navy's Administration*

The organisation of the sailing navy reflects what we have seen already of Christian IV's administrative style. He paid too much attention to minor details while ignoring more fundamental issues, and he was unwilling to delegate responsibility resulting in a failure to create an effective command structure in his absence.

The strict disciplinary measures outlined in the *skibsartikler* ensured that there were no serious problems in maintaining order among the men. They were also well fed and paid, and although there were problems from time to time in finding the necessary finance, there was never any danger of large scale mutiny or other disruption aboard the navy's ships. The organisation of the men and their supervision by the junior officers seems to have worked fairly effectively, and there was never any serious question raised over the efficiency of the crew. When Christian IV complained in 1641 that only 40 out of 200 seamen aboard *Store Sophie* could understand a compass he was being a little unfair as it was hardly necessary for ordinary seamen to be versed in navigation to carry out their largely manual tasks.<sup>55</sup> Although formal training in seamanship still left much to be desired the policy of recruiting and conscripting men experienced in the maritime trades, and the distribution of these men among

<sup>52</sup> Barfod, *Christian 3.s flåde*, 177.

<sup>53</sup> *Skibsartikler*, 271.

<sup>54</sup> W. G. Perrin (ed.), *Boteler's Dialogues*, Navy Records Society, LXV (1929), 281–6.

<sup>55</sup> Letter to Sten Beck & Hans Ulrik Gyldenløve, 13 July 1641, *egenhændige Breve*, V, 98–100.

messes, meant that there was a fairly high level of competence among seamen. The move away from the *borgeleje* system to billeting men at Bremerholm also provided a more professional crew, and one that could be mobilised more effectively.

As so often with Christian IV's government, though, the problems were at the top of the command chain. There were no permanent posts of admiral or any type of training or formal career advancement among officers, resulting in senior naval officers who were poorly trained, regulated and commanded. This lax and somewhat unprofessional style of command has its roots in the time when naval battles consisted simply of boarding an enemy ship and engaging in hand-to-hand combat, similar to a land battle, but fought at sea. However, by the time of Christian IV it was no longer adequate to send the navy into battle commanded by men who had little knowledge or experience of naval warfare. The king's control of strategic and tactical decision making meant that his subordinate officers were inexperienced and untrained in these matters. Christian IV had received some training in naval strategy as a boy and was reasonably competent. During the Kalmar War his decision to mobilise the fleet and station squadrons close to the Swedish border before declaring war was instrumental in achieving a swift and effective blockade of Älvsborg and Kalmar. His use of the navy in defending the islands and supporting a recapture of Jutland in the *Kejserkrig* was effective and his decision to blockade Wismar and demonstrate Denmark's naval strength was highly successful. The attack on Hamburg in 1630 was initially tactically naïve but he was able to adapt his tactics to the situation to achieve his aims. During the Torstensson War his naval strategy was initially successful. He prevented the Dutch fleet reaching the Baltic by quickly sailing to the North Sea. Despite the difficult shallow waters in which the two fleets met at Lister Dyb his tactics resulted in the Dutch fleet being soundly beaten and forced to retreat. At the battle of Kolberger Heide it was not so much Christian IV's tactical planning that achieved success as the aggressive leadership of *rigsadmiral* Jørgen Vind.

Christian IV's strategic decision making started to go badly wrong during the blockade of the Swedish fleet at Kiel Fjord. He was extremely angry at the events on July 30 and 31, when the Swedes went to sea and tried to provoke a battle. Having waited so long for such an opportunity he was dismayed that the newly promoted admiral Peder Galt avoided action and instead retreated. Christian



IV's fury was further compounded when the Swedish navy set sail for home unnoticed by the Danes. He had genuinely believed that the Swedes were caught in a trap at Kiel Fjord and that the Danish navy was the stronger. In the aftermath of this incident he made a series of fatal strategic errors. He assumed that the Swedish navy would not sail again that year and that the expensive Dutch fleet would not be retained over the winter. He therefore decommissioned most of the Danish fleet, and only sent out a small squadron to defend Danish waters. In the meantime he was determined to punish Peder Galt for his failure to attack and he was promptly tried and executed. Having met with disappointment at Kiel Fjord Christian IV's instructions to Pros Mund, the commander of the remaining Danish fleet, were unequivocal. He was to defend the kingdom 'with utmost power and might' and left no possibility of retreat. Despite being faced with overwhelming odds against the combined Swedish and Dutch fleets at Femern Belt, Christian IV's clear instructions and the fate of Galt meant that Mund was forced to attack even though defeat was inevitable. Christian IV was quick to lay the blame for the navy's defeat in 1644 on the poor performance of his officers, but he must also share some of the blame, not only for his poor strategic decisions, but also for not recognising the need to train his officers more effectively and not allowing them to make operational decisions.

Had Christian IV been more realistic he ought to have understood that a cautious fleet-in-being strategy was the only chance and instructed his admirals to avoid action under unfavourable circumstances. In this way Denmark could have used naval power to obstruct and delay Swedish operations and gain time. A victory at sea was clearly beyond the Danish navy's resources, but Christian IV lived under such an illusion of strength that it prevented him from thinking in such a way.

In conclusion it can be said that, individually, the ships were reasonably well organised and disciplined, and when commanded by the more skilled officers they proved to be very effective. However, when it came to the navy as a whole the deficiencies in a number of areas such as officer training, the lack of a permanent command structure, the absence of a formal signalling code, Christian IV's inability to delegate operational decision making and the inability of subordinate officers to act on their own initiative, significantly reduced its effectiveness.



## PLATES



Plate 1. Christian IV aboard *Trefoldighed*, painted by Nicolai Wilhelm Marstrand in 1855. One of the most enduring images of Christian IV is of him valiantly leading his navy against the Swedes at the battle of Holberger Heide in 1644, whilst wounded in the eye (The Museum of National History at Frederiksberg Castle).



Plate 2. A romantic image of Christian IV in the dockyard, taken from J. C. Tuxen's history of the Danish navy, 1875.





Plate 3. Detail from Willem Janszoon Blaeu's map of Europe, first published in 1617. The shaded area shows very approximately the area of maritime sovereignty claimed by Christian IV.



Plate 4. *Allegory of the Sound* by Isaac Isaacz, 1622. This highly symbolic painting was commissioned by Christian IV to act as propaganda, reinforcing his sovereignty of the Sound. Kronborg Castle can be seen in the background with a number of Danish warships protecting the Sound. In the foreground, the figure of Neptune holds his trident. This may be intended as a reference to Christian IV, who frequently portrayed himself as the god of the sea. He is leaning on a vessel issuing water, which is typically associated with river gods, but here possibly symbolizes the Sound as a Danish 'stream'. The female figure crowned with a castle normally indicates a town or city, so perhaps she symbolizes Kronborg. Beside her is a cornucopia, symbolizing prosperity and abundance. The pearls at her feet indicate wealth from the sea. The lion represents the state of Denmark, being one of the heraldic symbols of the country. The triton blowing a conch shell is a sort of aquatic version of the 'fame' figure, trumpeting good news (Statens Museum for Kunst, Copenhagen).





Plate 5. Christian IV c.1640. The long piece of hair tied with a ribbon is often regarded as a sailor's pigtail, showing Christian IV's love of the navy. In fact it was a hair disease known as Polish plait (*plica polonica*), which was considered bad luck to remove.





Plate 6. Engraving of a Danish warship by Christian Møller. This is often thought to represent *Tre kroner* during Christian IV's visit to London in 1606, however there is no evidence to support this and the proportions of the engraving do not match those of the ship. It illustrates a Latin homage to Christian IV, roughly translated as: *To the divine Christian the Fourth, the mightiest king in the north. Mighty king, whose like has not been met in times past or in our own time. Oh you, who is above every flattery, kindly take my vessel, which I present to you, as just a little part of the navy, with which the Danish kingdom projects and extends itself as well as acts as the nations defence. For this we have you to thank. The sea's gods have therefore granted you sovereignty and a firm governance over the north, which neither destiny nor force, nor any age, can destroy.* Christian Møller composed this poem and with his own hand wrote these lines. The ship is adorned with flags and pennants depicting the symbolic regalia of the lands over which Christian IV ruled (The Royal Library, Copenhagen, The Department of Maps, Prints and Photographs).



Plate 7. The arsenal dockyard complex. Detail from Jan van Wijck's prospect of Copenhagen, 1611. Christian IV's first naval building project was to create this sealed harbour incorporating an arsenal, the long building on the left hand side, and a victualling store, on the right hand side. On the extreme left can be seen the powder store beside which cannon are being tested.





Plate 8. The Bremerholm naval dockyard. Detail from Jan van Wijk's prospect of Copenhagen, 1611. The rudimentary nature of the dockyard can clearly be seen in this view. For the most part it consists of an area of rough ground outside the city's defensive walls. The long building is the ropewalk and the building on the extreme left, inside the city walls, is the forge.





Plate 9. Prospect of Copenhagen by Rombout van den Hoeyen, c.1615. This view shows just how much the navy dominated the city of Copenhagen. On the left hand side is the arsenal dockyard complex and on the right hand side is the Bremerholm naval dockyard. In the centre is a rather fanciful representation of the then unbuilt bourse and commercial harbour.



Plate 10. View of Copenhagen by Bonaventure Peeters, c.1621. In the centre can be seen Copenhagen castle, with a Danish warship in front. The mound on the extreme right hand side is the end of the city wall, with the dockyard forge immediately adjacent. The Dutch warship in the foreground is firing a salute (Copenhagen City Museum).



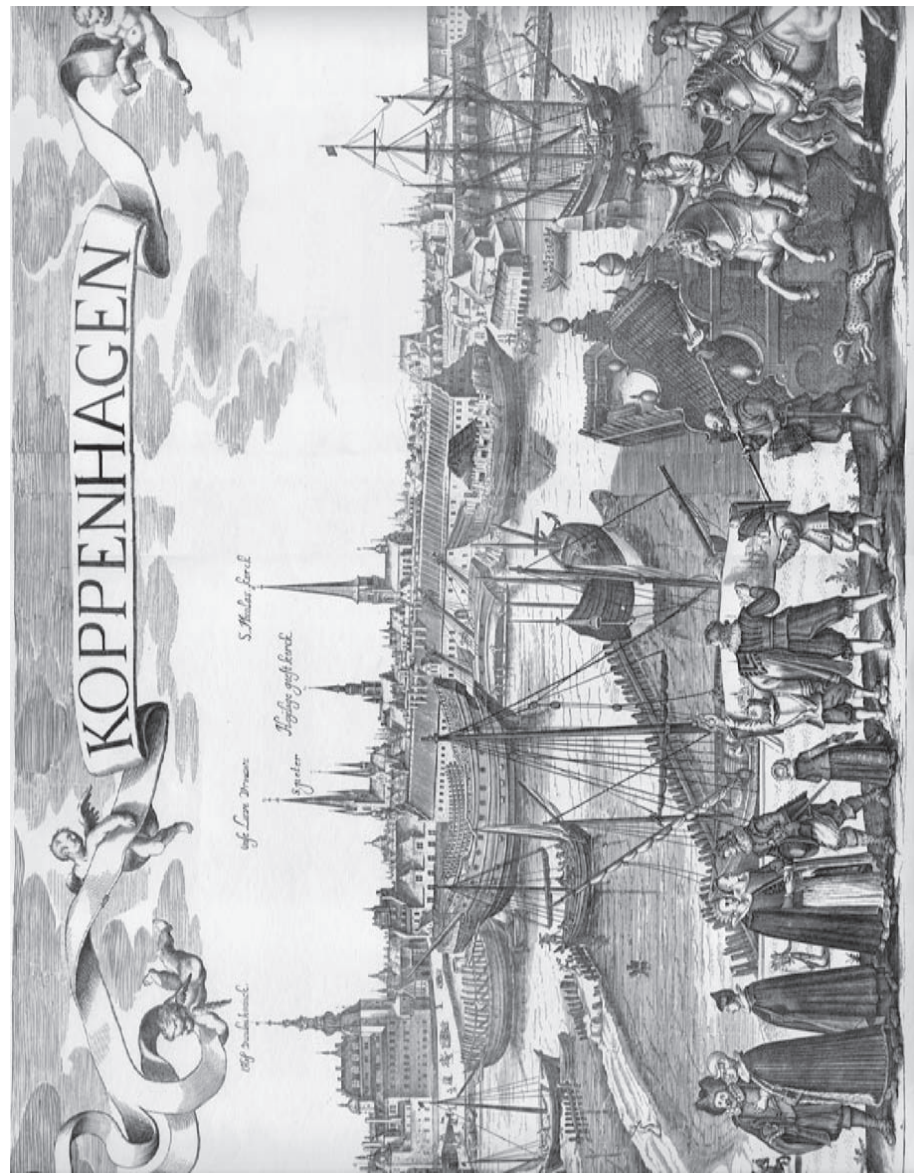


Plate 11. The Bremerholm dockyard c.1635. Detail from Hugo Allard's prospect of Copenhagen, published c.1650. This view shows the massive improvements made to the naval dockyard in the 1620s and 1630s. The long building behind the ships is the new forge, completed around 1627.

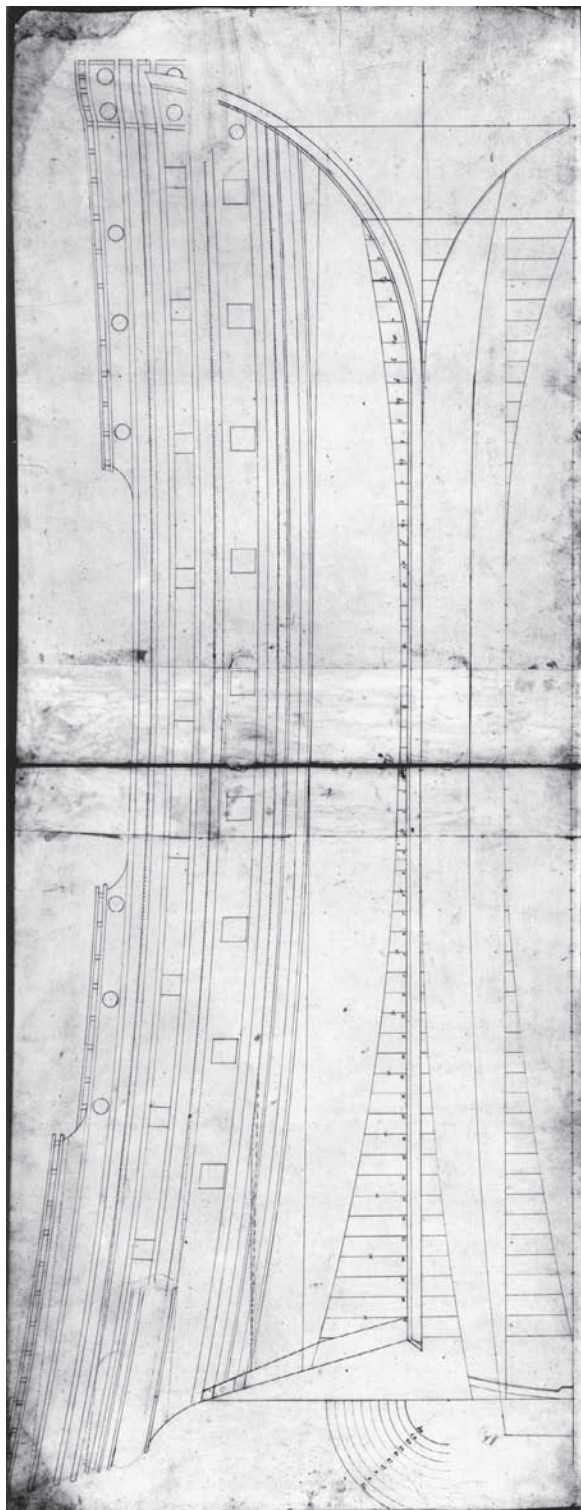


Plate 12. Draught of *Argø* by David Balfour. David Balfour was probably Christian IV's most accomplished shipwright. A number of his design drawings have survived. They are the earliest working ship's plans in existence and give a valuable insight into the design of the Danish navy's warships. *Argø* was a large warship completed in 1601 (Danish National Archives).

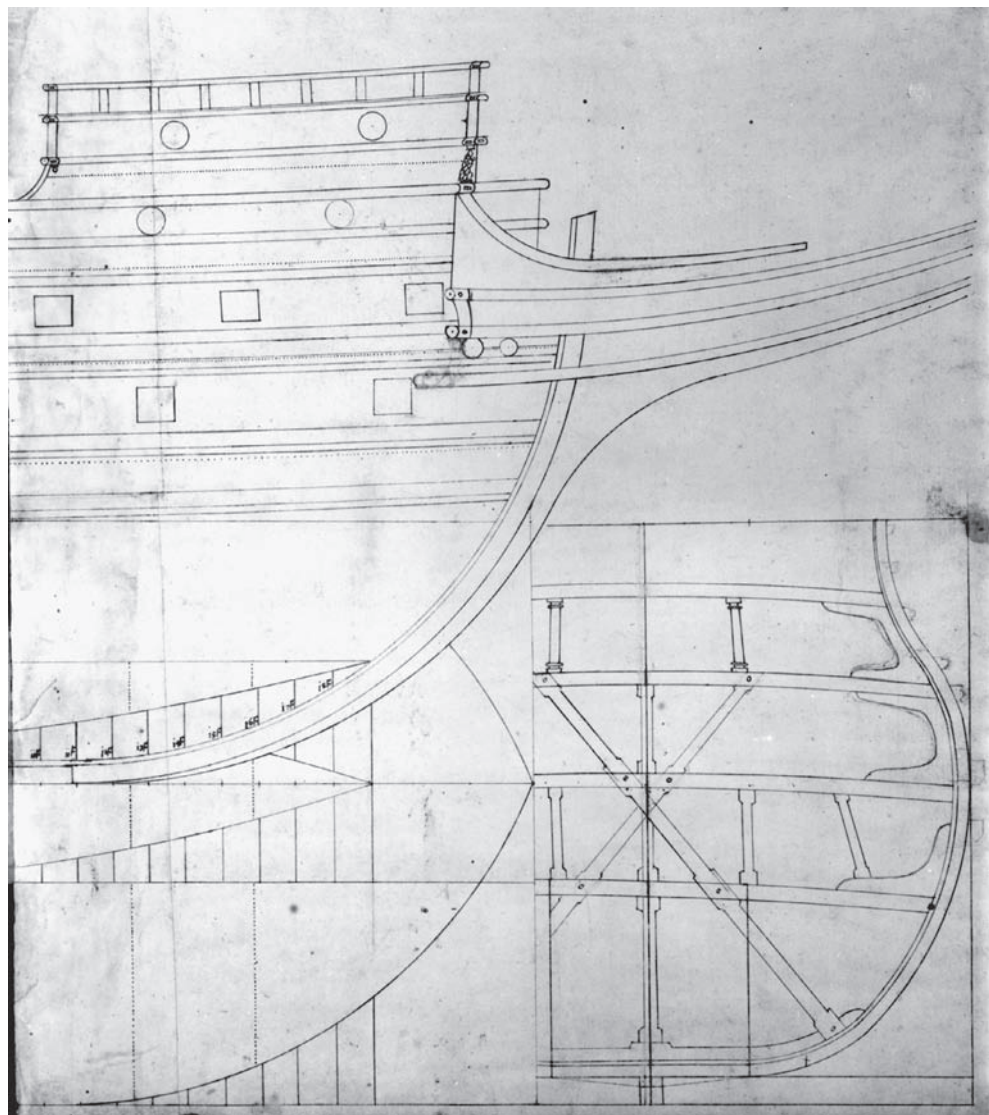


Plate 13. Draught of *Tre kroner* by David Balfour. *Tre kroner* was the largest warship built for Christian IV and was used as his flagship during his visit to London in 1606. However, it proved too large for normal duties and spent most of its career laid up in Copenhagen. The midship section clearly demonstrates Balfour's English style of design (Danish National Archives).



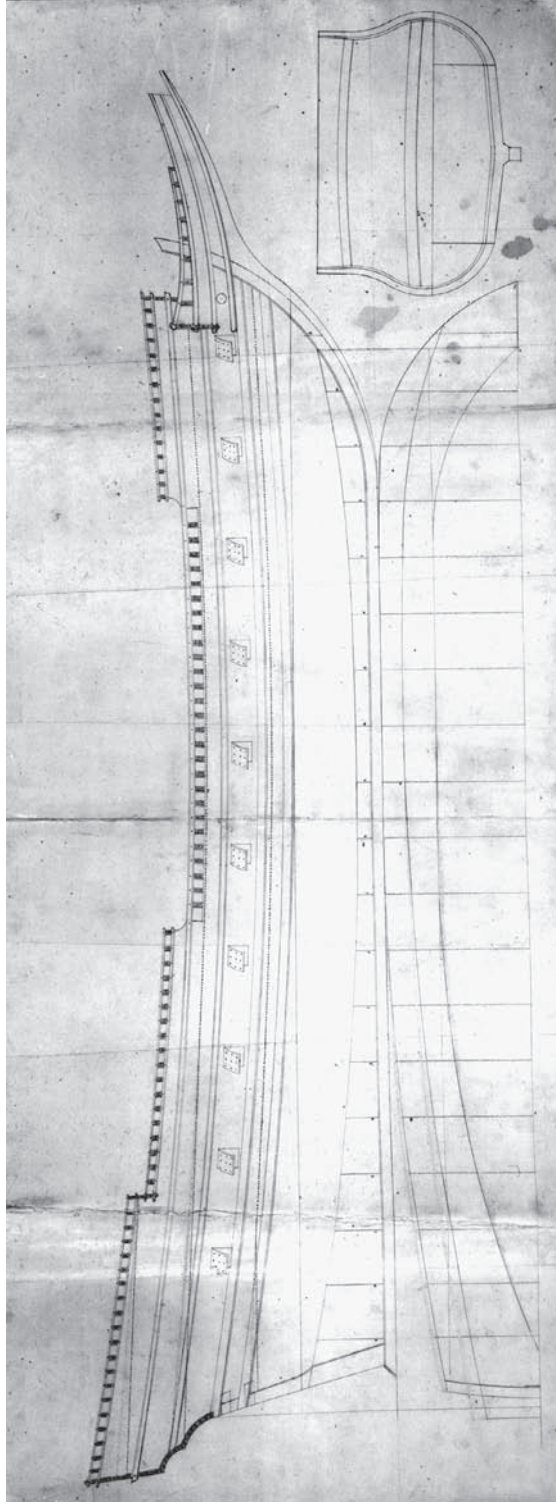


Plate 14. Draught of *Hummeren* by David Balfour. Balfour used the English 'whole moulding' technique of ship design, but also incorporated Dutch elements into his design. The design of *Hummeren* is almost entirely in the Dutch style, but Balfour used English design techniques to create it. This design proved particularly enduring and many copies of this ship were made (Danish National Archives).

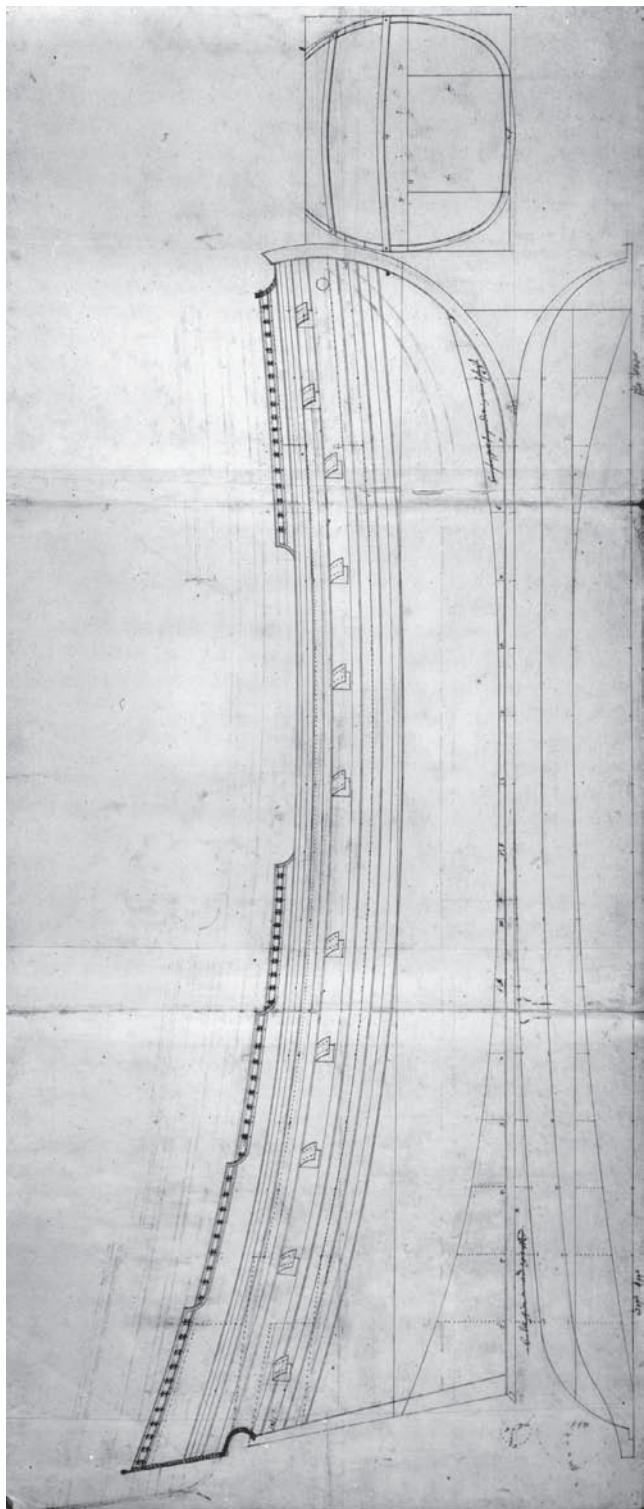


Plate 15. Draught of a *defensionskib* by David Balfour. Christian IV wished to promote the building of armed merchant ships by offering special privileges to ship owners. Balfour was given the job of designing the standard model for these vessels and created a modified version of a Dutch *fluit* incorporating a gun deck. In practice few of these ships were built and most were smaller than Balfour's design (Danish National Archives).

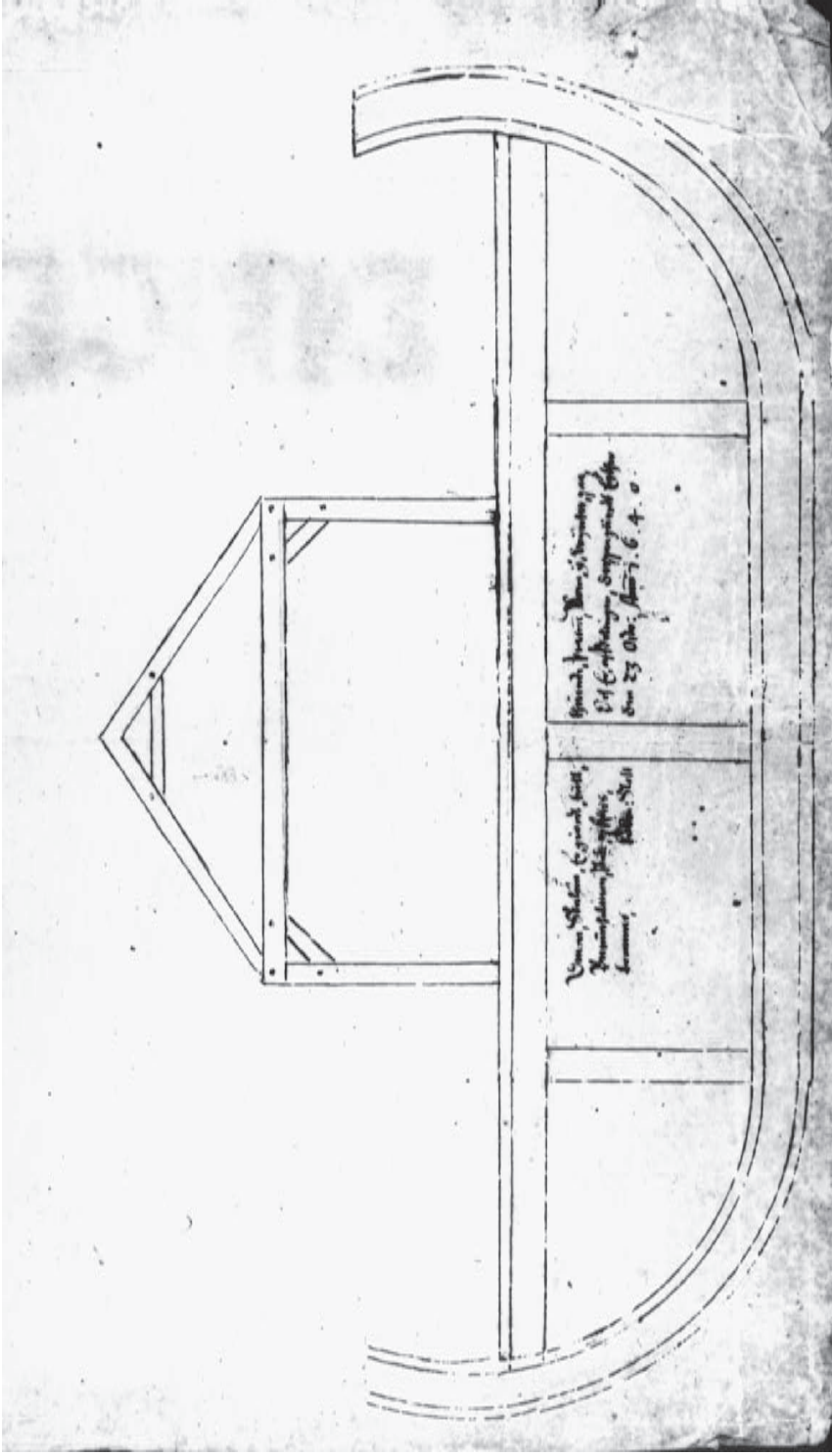


Plate 16. Draught of a barge drawn by Christian IV. This plan is rather crudely drawn and shows a very simplistic construction, but it does show that Christian IV was familiar with ship design techniques. It bears the inscription 'this model is made for two barges which shall be built at Bremerholm this winter, and the section done according to these timbers'. It is dated 23 October 1640. The two barges were dockyard 'prams' known as *Arche Noa* and *Noa Ark* (Danish National Archives).

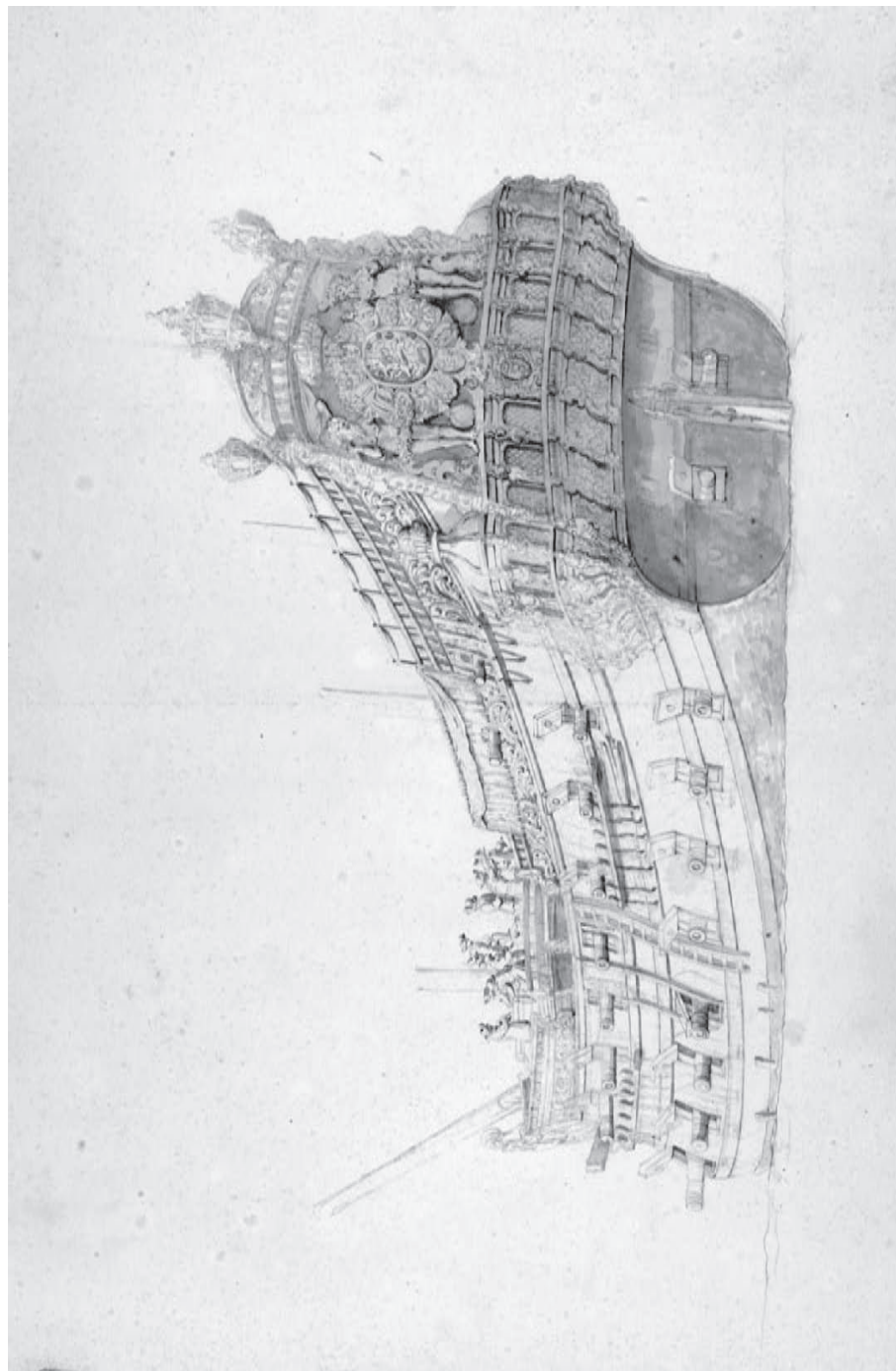


Plate 17. The Danish warship *Norske Løve* by Willem van de Velde, 1658. This vessel was built by the Scottish shipwright Daniel Sinclair at the Slotø shipyard in 1634. This view clearly shows the intricate decoration used to adorn the larger ships in Christian IV's navy (Museum Boijmans van Beuningen).



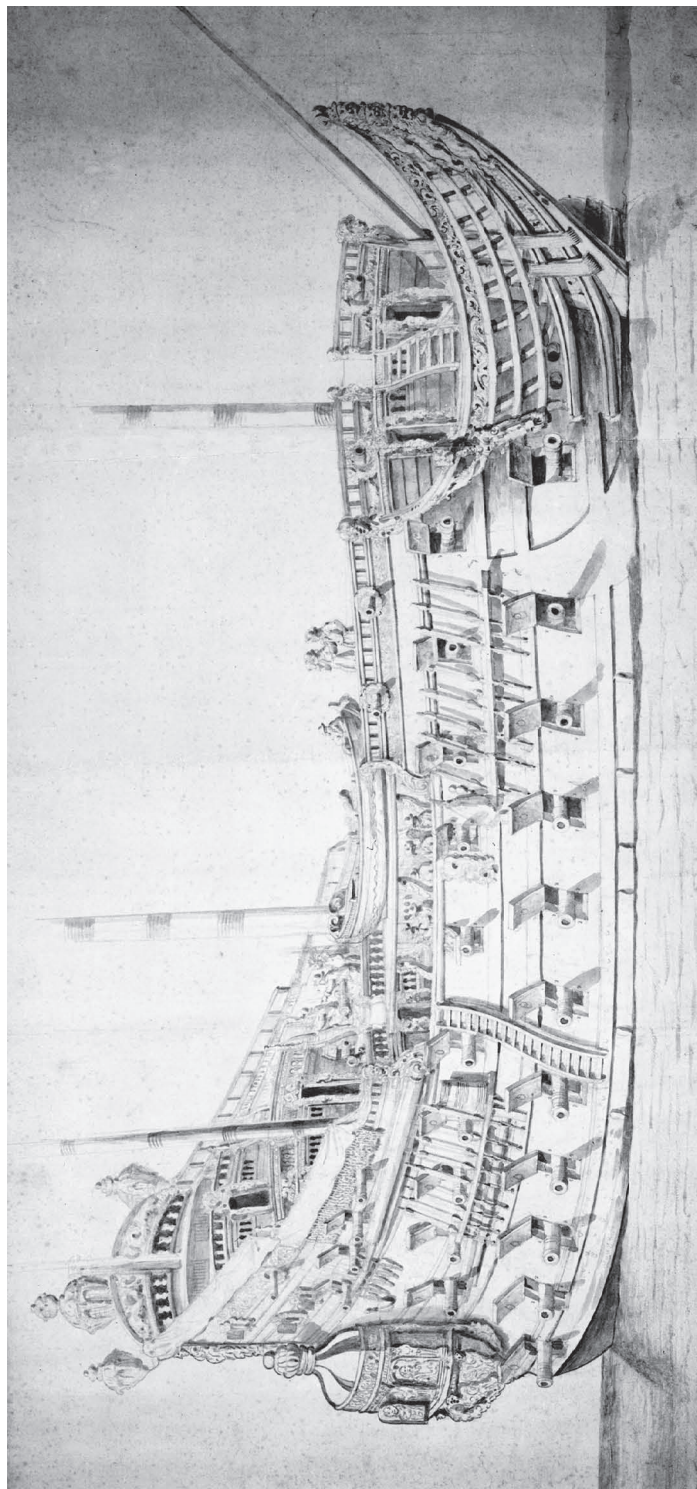


Plate 18. The Danish warship *Trefoldighed* by Willem van de Velde, 1658. This ship was built by the firm Berns and Marselis in Neustadt. It was rebuilt by the English shipwright James Robbins as soon as it was delivered in 1642 as it did not match the model agreed by Christian IV. It is one of the most famous warships in Danish history as it was on this ship that Christian IV was wounded whilst defending his country against Sweden. The incident is remembered in the Danish national anthem *King Christian Stood by Lofly Mast* (National Maritime Museum, London).



Plate 19. Corfitz Ulfeldt (1606-64). A nineteenth century lithograph of a contemporary portrait owned by Count Waldstein in Vienna. As steward of the realm Ulfeldt took over responsibility for the civil administration of the navy in 1643. He used this position to embark on a large-scale embezzlement of state funds.





Plate 20. Ove Gjedde (1594-1660). Gjedde was appointed state admiral in 1644. He had little experience of the sea, but was a good self-publicist and had friends in high places. During the Torstensson War he failed to carry out his orders and managed to wreck his flagship *Store Sophie*, breaking his leg in the process. He was considered so poor that a completely new position of state vice admiral was created in 1645 (National Maritime Museum, London).



Plate 21. The capture of Älvsborg, 1611. This was one of the most successful amphibious actions carried out by Christian IV's forces, resulting in the capture of Älvsborg castle and several Swedish ships (National Library of Sweden).



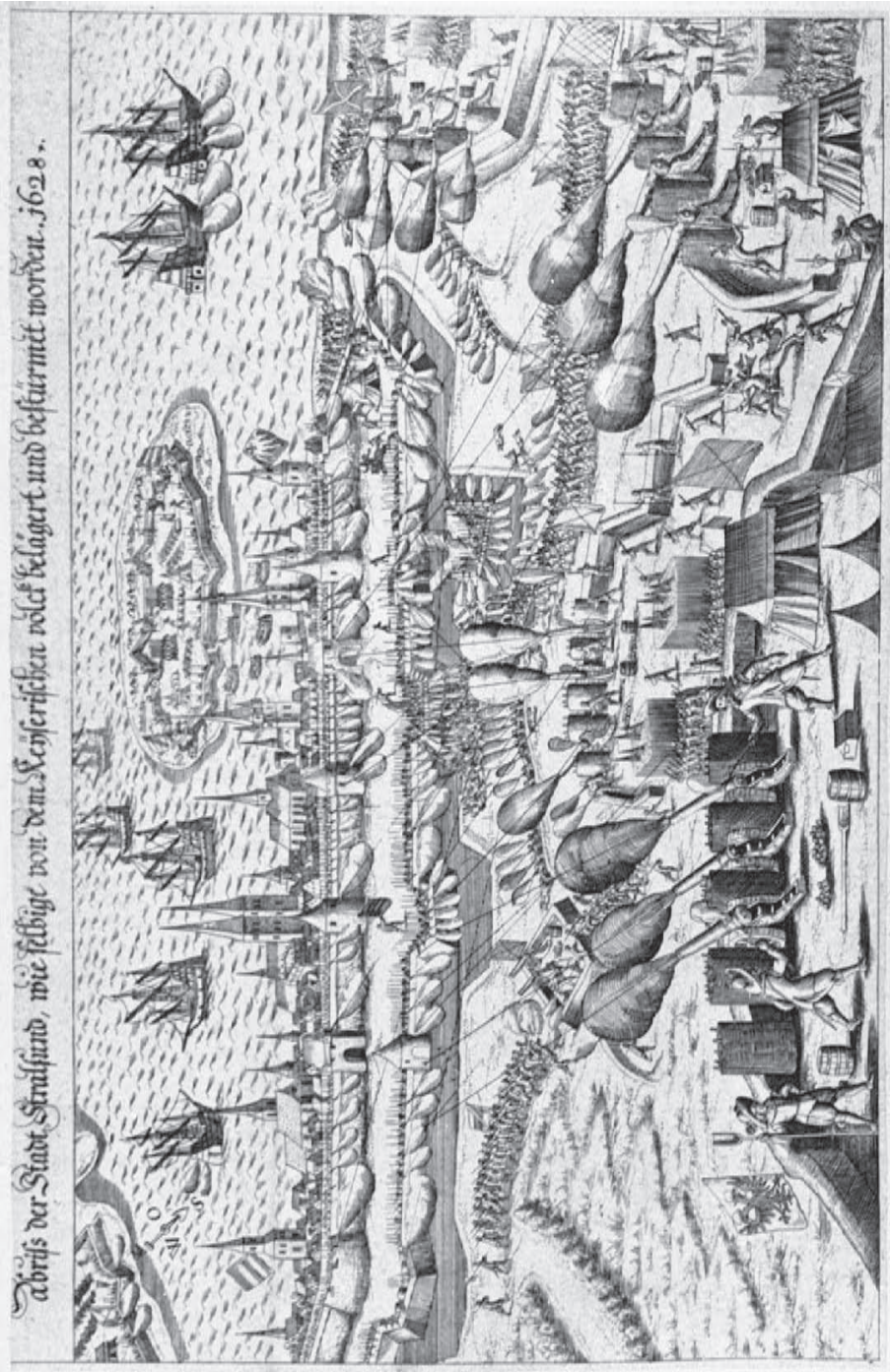


Plate 22. The relief of the siege of Stralsund, 1628. Christian IV personally commanded a fleet of six warships and 150 transports to relieve the siege of Stralsund. The Danish intervention forced Wallenstein to abandon the siege and helped to quash his maritime ambitions (National Maritime Museum, London).



## CONCLUSION

### HOW GOOD WAS CHRISTIAN IV'S NAVY?

In order to assess how good Christian IV's navy was we first need to establish the basis for measuring success. As the navy operated very much as the king's own personal possession, it is worth investigating whether it achieved what Christian IV wanted from it. It is also worth comparing the Danish navy in terms of developments elsewhere in Europe. Christian IV's navy operated in a period of profound change in the role of navies. Naval tactics changed dramatically, navies became much larger and warships evolved into large specialist gun-carrying platforms. The role of the private sector in naval warfare diminished and states took on the burden of financing and administering these large navies. Much has been written of this period in terms of a 'Military Revolution'. This concept has now been so stretched in terms of its timescale and the notion of what is considered revolutionary that it has become virtually meaningless, but there are still some useful common factors that have evolved through this debate, and more recently through Jan Glete's exploration of the concept of the 'fiscal-military state', that provide a useful framework for comparison. Progress towards the development of a modern professional navy can therefore be assessed in terms of the state's monopolisation of violence at sea, the development of military hardware and naval infrastructures, the professionalisation of naval personnel, the bureaucratisation of naval administration, and the navy's relationship to the form of government.

#### *The Navy as an Instrument of Power*

The principal objective that Christian IV wanted from his navy was power. His one over-riding desire was to enhance his own reputation. From this stemmed his drive to increase Denmark's power base in the Baltic and to elevate the country's status in Europe. The sheer strength of the navy made Denmark a European maritime power and impressive displays such as the 1606 visit to England and the

royal wedding in 1634 reinforced that status. However, real power lay in possession of the Sound and the ability to sell protection to all passing ships. The money raised in this way was used to finance the expansion of the royal court and the building of impressive new royal warships and palaces, which then further enhanced the prestige of Denmark and Christian IV.

In order to justify this protection money the Danish navy needed to maintain control of as much of the Baltic as possible, and to keep it peaceful for traders. This was achieved by keeping the seas clear of pirates and by suppressing the ability of other Baltic states to wage war at sea. In combating piracy the navy was very successful and the Baltic was kept remarkably safe. The navy was also very effective in stifling the naval ambitions of Poland and the Habsburg Empire in the Baltic. When it came to Sweden, however, it was a different story. The success of the Danish navy in the Kalmar War was not long lasting and by the 1630s the much-expanded Swedish navy meant that Sweden controlled much of the Baltic. However, while the Danish navy remained powerful the maritime powers continued to respect Denmark's control of the Sound. Only after Danish naval strength was decimated during the Torstensson War did the Dutch dare risk evading toll payments. Naval defeat and subsequent territorial losses meant that Denmark's ability to enforce high tolls was severely curtailed.

The Sound, of course, was not the only place where tolls were raised and Christian IV's navy enabled him to sell protection to ships sailing through northern Norwegian waters, even though protection here was rather nominal, and on the Elbe. The Danish navy therefore had the ability to control the movement of virtually all imports and exports to northern Germany, Poland, Sweden, and Russia. With the economies of England and the Netherlands relying so heavily on Baltic trade it was inevitable that the strength of the Danish navy would play a significant part in English and Dutch foreign policy in Eastern Europe. The strong naval presence in the Danish East India Company and other trading companies also meant that Denmark encroached on the growing trading empires of the other maritime powers of Europe. It is likely that without such a powerful navy Denmark would have remained on the periphery of European politics. With the navy, Christian IV could force other powers to take note of Danish interests and push himself forward as a European leader.



Defeat in the *Kejserkrig* meant he lost much of this reputation, but the show of naval strength during the peace negotiations managed to secure a face-saving peace settlement. The role of the navy was therefore crucial in preserving what little status he had left. Just how crucial the navy was in maintaining a position of power and prestige is shown by the catastrophic results of naval defeat in 1644, which saw a crippling national defeat for Denmark and a bitter and humiliating personal defeat for Christian IV.

Another key area where the navy provided Christian IV with power was in his struggle with the *rigsråd* and in the early years of his reign it was highly successful in achieving this goal. By maintaining personal control of the navy he gained a significant power base that enabled him to disregard the views of the *rigsråd* to pursue his own expansionist policies. This is seen to dramatic effect in 1630 when he acted completely against their wishes by mobilising the fleet and imposing tolls on the Elbe. In his later years the navy was less successful in providing Christian IV with power over the *rigsråd*, largely because the arguments over naval finance created such animosity that control of the navy turned into a bitter battleground, resulting in displays of petulance rather than real power.

Despite these setbacks at both international and domestic levels at the end of his reign, the navy for the most part, did provide Christian IV with an effective instrument of power, and from that perspective it must be considered a success.

### *The State Monopolisation of Violence at Sea*

One of the key aspects of the development of modern navies was the general trend for states to monopolise the exercise of violence at sea. This was characterised by states developing navies that they owned and administered themselves, rather than relying on temporary forces of hired or commandeered private ships. This was something that Denmark was very early to adopt, but not as a matter of choice.

For a variety of reasons the Danish merchant fleet was relatively small. Therefore, if the state needed to mobilise a fleet it could not call upon any significant number of armed merchantmen, since they simply did not exist. The development of a state-owned navy was therefore a necessity. The process of building up a state navy was begun during the war of Swedish independence, around 1500, but

until the Nordic Seven Years War (1563–70) the number of state-owned ships remained fairly small. During this war the Danish navy was supplemented with several armed merchantmen. Her ally Lübeck had a fleet largely composed of armed merchantmen. Both fleets suffered heavily at the hands of the predominantly state-owned Swedish navy consisting of purpose-built and well-armed warships. Denmark's main problem may have been a lack of good ordnance, but one consequence of the defeat was that the navy was enlarged by the building of more purpose-built warships and became almost entirely state-owned.

The fact that the navy was predominantly state-owned was clearly very important to Christian IV in terms of prestige, but his attempts to develop a force of *defensionskibe* demonstrate that he did not regard state ownership of the entire navy as necessarily a good thing. Finance was a major issue here and Christian IV clearly did not wish the burden of naval defence to be borne entirely by the state. Had larger numbers of privately owned ships been available then the state-owned navy would probably not have been quite so large.

Sweden was in a very similar situation, with a very small merchant fleet, and in contrast to most other north European countries both Scandinavian countries had virtually fully state-owned navies by the late sixteenth century. In England there was a traditional reliance on supplementing the core of the state-owned navy with privateers, although dependence on privately owned ships steadily diminished. The Dutch navy was largely state-owned, but in times of great crisis it was supplemented by large numbers of private vessels. During the First Anglo Dutch War (1652–54) about a third of England's naval strength came from armed merchantmen. On the Dutch side this figure was nearer two-thirds.<sup>1</sup> Spain, which had the largest navy in the early seventeenth century, could count only a handful of state-owned ships in its combined fleet of well over a hundred vessels.<sup>2</sup>

The rapid development of the Danish navy under Christian IV meant that it became one of the largest state-owned navies in Europe

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<sup>1</sup> *The First Anglo Dutch War*, Vols. 1–6, (Navy Records Society, Vols. XII, XVII, XXX, XXXVII, XLI, LXVI, London, 1899–1930).

<sup>2</sup> Many Spanish vessels were leased on long-term contracts. I. A. A. Thompson, *War and Government in Habsburg Spain 1560–1620*, (London, 1976); David Goodman, *Spanish Naval Power, 1589–1665: Reconstruction and Defeat*, (Cambridge, 1997).

and, on a superficial level, this could be seen as a mark of progress. But, as Christian IV regarded the navy as a royal possession rather than as a state possession, it actually represented a *royal* monopolisation of violence at sea. There was in fact a long tradition of warships being regarded as royal possessions in Denmark, which dates from the very beginnings of the navy under king Hans. Royal ownership was demonstrated very clearly when Christian II was deposed in 1523. He fled to the Netherlands with all the possessions he could gather including, significantly, as much of his fleet as he could mobilise. The power struggle between Christian IV and the *rigsråd* over control of the navy therefore betrays its feudal origins, and shows that Denmark was far from advanced in the concept of having a state-owned navy. State ownership was certainly not the result of a policy of modernisation.

### *The Development of Military Hardware*

The development of a 'modern' sailing navy in Denmark began during the Nordic Seven Years War, when, for the first time, naval battles were fought at a distance using heavy artillery. Danish ships were lightly armed with poor quality wrought-iron guns and specific instructions were issued at the start of the war prohibiting the use of cannon until the ships were close enough to board.<sup>3</sup> However, the Swedish ships were heavily armed with modern copper guns that were more able to fight at long range and during the course of the war the Swedes repeatedly defeated the allied Danish-Lübeck fleet. As a consequence of defeat Frederik II both improved Denmark's cannon production capabilities and built more large purpose-built warships. It was not the first time that large ships with heavy guns had been built for the Danish navy, but it was the first time that the navy as a whole was conceived of in terms of a fleet of large heavily armed battleships.<sup>4</sup>

The navy that Christian IV inherited was therefore well on the way to being what could be termed a modern sailing navy. He con-

<sup>3</sup> Lind, *Fra Kong Frederik den andens tid*, 53.

<sup>4</sup> Glete has calculated that the average size of ships in the Danish navy virtually doubled between 1560 and 1590. (Glete, *Navies and Nations*, II, 596).

tinued the process of building up his fleet with ships of steadily larger size and greater firepower so that by the start of the Torstensson War half of the navy's ships were over 500 tonnes displacement. However, Sweden's massive naval expansion ensured that at the start of the war it not only had more ships than Denmark, but they were also considerably larger. Defeat prompted Denmark to construct yet larger ships, such as the *Victoria* and *Frederik*, and to increase the size of existing ships. Improvements in shipbuilding technology and naval strategy meant that these large ships were now much more practical as battleships than their earlier counterparts. One interesting aspect of the development of Baltic navies is that they were achieved mainly by foreign shipbuilding expertise. Native Scandinavian shipbuilding technology was poor and the lack of any constraining traditions may have enabled much bolder steps to be taken in the development of the modern sailing navy than elsewhere. In David Balfour, Christian IV had one of the most forward thinking shipwrights of his day and his innovative designs had a long-lasting impact on the development of the Danish navy.

In terms of naval ordnance Denmark was unremarkable. Although heavy guns had been recognised as a ship's principal armament since the Nordic Seven Years War, Frederik II had relied greatly on either purchasing cannon from England or seizing them from English ships.<sup>5</sup> Christian IV improved Denmark's cannon manufacturing capabilities with cannon foundries at Copenhagen and Helsingør, and recruited specialist gun founders from abroad. The improved domestic production of cannon enabled a better standardisation of calibres, which made their deployment much easier to administer.

Christian IV's navy was therefore relatively advanced in terms of the development of naval hardware and the ships laid down at the end of his reign could be considered as the first generation of true Danish line-of-battle ships.

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<sup>5</sup> Edward P. Cheyney, 'England and Denmark in the latter days of Queen Elizabeth', *Journal of Modern History*, I (1929), 8–39; and Walther Kirchner, 'England and Denmark 1558–1588', *Journal of Modern History*, XVII (1945), 1–15.



*The Development of a Naval Infrastructure*

To cope with the rapid increase in the size of the navy there had to be a comparable expansion of shore facilities to enable the new ships to be built and maintained. The development of Copenhagen under the guidance of Christian IV was truly remarkable, transforming the old medieval town into one of the foremost fortified naval cities in Europe.

The initial development of the arsenal and victualling harbour complex was matched in later years by the construction of massive new workshops at Bremerholm, transforming it from a piece of rough land with a few workshops into a very large and complex workplace where everything needed for a navy could be manufactured and stored. By the middle of the seventeenth century Denmark had one of the most impressive integrated naval dockyards in Europe and nothing of its kind existed in England, Spain or the Netherlands.

The other dockyard developments at Slotø and Glückstadt were much smaller and less impressive than Bremerholm, but they do show that the naval infrastructure was developed carefully in accordance with the navy's operational needs. By concentrating facilities at Copenhagen the maintenance of the navy was made relatively efficient, at least in early modern terms, and reduced the need to duplicate resources, which would have been an additional draw on the already stretched resources of the state.

However, although very impressive, Christian IV's developments were by no means perfect. The initial expansion of Copenhagen's city walls left Bremerholm outside the fortifications, which cannot be easily explained. Why build a fortified naval town if you are going to leave the naval dockyard outside the fortifications? The second phase of the city's expansion, on the other hand, was far too grandiose, more than doubling its size. Copenhagen was developed very much to satisfy Christian IV's own vision of Denmark as a leading European maritime power, without taking into account the actual demographic needs, or the state's ability to pay for it.

*The Professionalisation of Naval Personnel*

The trend in modern navies was for their seamen to be well trained and permanently employed by the state. Before the Nordic Seven

Years War it was common practice in Denmark to retain only a few seamen in royal service. However, with the development of a much larger state navy it became necessary to maintain a permanent force if the fleet was to be mobilised effectively every year. Even though the navy put to sea for a few months the majority of seamen were employed all year round. The early system of billeting seamen in towns around the country had its flaws, but it did provide a means of ensuring that naval seamen remained in state service without over-burdening finances. However, as the navy expanded under Christian IV this system proved inadequate and the practice of billeting seamen at the dockyard, although expensive, provided much more professional crews.

There was little formal training for ordinary seamen. Ideally seamen were recruited from the maritime trades so they would have some basic knowledge, but this was not always possible. The training of inexperienced men was done through the mess system which deliberately placed new recruits alongside more experienced men. Some attempt at training seamen in the art of navigation was made in the early years of his reign, but it was only after Christian IV had personally experienced the poor quality of some of his seamen that he established a formal system of education in 1647. Despite these shortcomings, the process of creating a professional crew was fairly well advanced in Denmark, with the practice of keeping a permanently employed nucleus of seamen established more than a century before England.<sup>6</sup>

Gunners were similarly employed all year round to retain their skills, but they were initially not specifically trained to serve at sea. In 1629 Christian IV recognised the need to train naval gunners and a new training regime was implemented. However, in continuing to load cannon from outboard until the 1640s Denmark was a little backward. The more efficient technique of inboard loading had been used in England since the 1620s and it was not until 1645 that inboard loading became standard practice in Denmark.<sup>7</sup>

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<sup>6</sup> This practice was begun in England only during the 1689–97 war with France. Michael Duffy, 'The Foundations of British Naval Power', in Michael Duffy (ed.), *The Military Revolution and the State 1500–1800*, (Exeter, 1980), 69.

<sup>7</sup> P. Padfield, *Guns at Sea*, (London, 1973), 57–69; and Preben Holck, 'Outboard Loading', *Mariner's Mirror*, XVII (1931), 282–3.

In terms of the having a formal outline of responsibilities and a code of discipline for crews Denmark was also quite advanced. The *skibsartikler* were much more advanced than anything known in England, where the medieval 'Black Book of Admiralty' still governed discipline. The first 'Articles of War', which appeared in 1653, were designed specifically to counter the unprofessional conduct of naval officers during the First Anglo-Dutch War, and had little, initially, to do with the discipline of crews.<sup>8</sup> France, however, published a penal code for crews of the galley fleets in 1635 and in 1642 a code of discipline was issued for the Atlantic fleet.<sup>9</sup> Sweden also had its own *Sjöartiklar* that first appeared in 1570 and were then updated in 1644. They developed in a similar way to Denmark's, being first issued as specific instructions for a particular voyage, but later being issued as general instructions. They were less extensive than Denmark's, but there was little significant difference between the content of the disciplinary codes of the two Scandinavian navies.

The expansion of Bremerholm also meant that a certain effort had to be made to professionalise the dockyard workforce. Christian IV initiated a major formalisation of workers' roles during the 1620s when virtually every class of clerk or craftsman was given a written commission and job description on being engaged. The fact that the *Holm- og arsenalartikler* were revised and published in 1625 also reflects the growing need for a more formal approach to working practices and discipline in such a large workplace, and in terms of creating a professional dockyard workforce Denmark was very advanced.

When it came to the professionalism of senior officers things were not quite so good. Many had little experience at sea and their commissions were so vague as to be almost worthless. Even when these were rewritten in 1645, little attempt was made to educate officers in the art of seamanship, and the majority of them remained entirely dependent on their junior officers. A few skilled Dutch, English and Scottish officers were hired but, while they were individually competent, they had little structural impact on naval competence as a whole. It was not until 1663 that a conscious decision was made to bring in highly skilled officers from overseas to lead by example. A formal officer's training school was not established until 1701.

<sup>8</sup> N. A. M. Rodger, *Articles of War*, (Havant, 1982), 7–11.

<sup>9</sup> Alan James, *The Navy and Government in Early Modern France, 1572–1661*, (Woodbridge, 2004), 12 & 102.

The lack of any permanent posts of admiral, or indeed of any type of formal career advancement among officers, also had its effect on professionalism in the navy. With the *rigsadmiral* being such a political appointment there was often little respect for him as a seaman. The majority of men that Christian IV appointed to this post were of decidedly moderate skill. There were only two who could really have been described as professional navy men, but ironically these two proved to be the shortest serving of them all. This situation, although convenient for the king in maintaining personal control of the navy, failed to provide any kind of effective leadership in his absence.

Elsewhere privilege and patronage also played a more important role than competence when it came to the appointment of naval officers. This was particularly true in Spain where a sailor was considered a 'despised occupation' and a bar to career advancement and any claims to noble status. Recruitment of naval captains was therefore much more common from the ranks of soldiers rather than sailors.<sup>10</sup> Seamanship was much more valued in the Netherlands, where it was possible to be promoted from the lower deck, but noblemen were still more likely to command naval ships than commoners. There was no formal training, nor was there any security of employment for Dutch naval captains until 1626 when a permanent officer corps was established.<sup>11</sup> The problem of naval officers' competence was therefore not confined to Denmark and in terms of creating a professional officer corps Denmark was no better or worse than England, Spain or the Netherlands.

### *The Bureaucratisation of Naval Administration*

In order to adequately manage the increasing size and complexity of modern navies it was necessary to develop a more bureaucratic form of naval administration. In Denmark Frederik II began this process by reforming the existing structures that had carried over from medieval times. He appointed the first *rigsadmiral* and *Holmens*

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<sup>10</sup> Goodman, *Spanish Naval Power*, 241–53.

<sup>11</sup> Jaap R. Bruijn, *The Dutch Navy of the Seventeenth and Eighteenth Centuries*, (Columbia, SC, 1993), 40–53.

*admiral* and formulated the first dockyard regulations. However, in Christian IV's navy the administration remained stagnant. No new bureaucracy was set up during his reign, despite the growing size and complexity of the navy, and as a consequence it was stretched to breaking point.

The main problem was the power struggle between king and Council. Christian IV feared that delegating any control over the navy would effectively result in ceding political power to the *rigsråd*, which meant that subordinate officials were selected not so much for their abilities, but on whether or not they would contradict his authority. This is seen to dramatic effect in the posts of *rigsadmiral* and *rigshofmester*, which theoretically held military and civil control of the navy. For much of Christian IV's reign these posts were not filled and so the administration of the navy came under his own direct control.

In terms of dockyard administration the changes made to working practices and discipline outlined in the revised *Holm- og arsenalartikler* and in the detailed commissions for the workforce were definite improvements. However, the overall administrative structure remained unchanged and these improvements effectively formalised an existing structure rather than created a new one. The real problem of providing an effective and competent senior management was not addressed in any way. The problems facing the Danish naval administration can be seen at their worst in its financial administration. With the naval budget amounting to between one and two-thirds of the total state expenditure it seems almost unbelievable that there was no one dedicated official whose job it was to oversee naval finance, but this was because there was no one office which administered the task. Financial administration was divided between state and royal institutions in an ill-defined and politically contentious way that meant that no one knew, or was able to accurately estimate, the total expenditure of the navy.

While Danish naval bureaucracy stagnated the rest of Europe innovated. The Netherlands created its own naval administration in the closing years of the sixteenth century when its formal state navy was created, and Spain was continually refining its naval administration in the late sixteenth and early seventeenth centuries.<sup>12</sup> Sweden

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<sup>12</sup> Although the reforms did not necessarily make it any more efficient. Thompson,

virtually re-invented its naval administration in the 1620s and in the 1630s the Admiralty was constituted as one of the state colleges. In France, Richelieu established the foundations of a national French navy by first creating the administrative framework. In England, Charles I created the ship money fleets and the parliamentary seizure of the navy in 1642 paved the way for even greater administrative reform. Of all the northern European maritime powers Denmark remained the only one not to have radically changed its naval administration by the mid seventeenth century.

However, bureaucratic reform did not always achieve better results, and in terms of the ability to man the navy Denmark compared very favourably with other navies. The Danish semi-feudal method of manning the navy was far from perfect but it was much better than the situation in England. In theory English crews were to be recruited every year to provide the necessary manning for that year's sailing, and the majority of men would then be paid off at the end of the voyage. In practice though the conditions on the king's ships were so poor that few men were willing to join voluntarily and the press gangs were used to fill the ships. Once on board the crew could then find themselves captive for many years, simply because there were no funds to pay them off.

The paternalistic, rather than bureaucratic, form of naval administration favoured by Christian IV also ensured that the terms and conditions of employment were significantly better in Denmark. The seamen were paid a more attractive wage, which was also much more likely to be paid than in England. The period of service was limited to just five or eight years, rather than the indefinite service practised in England where a man could be repeatedly pressed into service until the age of 60. Denmark also took much greater care of sick and injured seamen, with four naval hospitals operating in Christian IV's reign. In England there was only the inadequate 'Chatham Chest' that issued charitable funds to incapacitated seamen. A dedicated English naval hospital was not opened until the end of the seventeenth century.<sup>13</sup>

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*War and Government in Habsburg Spain*, 163–173; and R. A. Stradling, *The Armada of Flanders*, (Cambridge, 1992), 176–203.

<sup>13</sup> Christopher Lloyd, *The British Seaman 1200–1860: A Social Survey*, (London, 1970), 87–9.

The Dutch navy depended solely on its captains to recruit enough seamen to sail in their ships. There were very few men who could be termed as professional 'naval' seamen since the crews were recruited on the labour market in the spring for that year's sailing and paid off once the ships returned to port. With the maritime trades so predominant in the Netherlands there was little problem in finding the necessary men, although an embargo could be placed on merchant sailings until the naval requirements had been met.<sup>14</sup>

In Spain seamen were similarly engaged year by year but wages were low and administrative inefficiency meant that wages were slow in coming and the victuals were often inedible. Service on Spanish naval ships was voluntary but with wages and conditions so poor there was always a chronic shortage of men.<sup>15</sup> The French navy faced similar problems and had to resort to conscription. A blanket ban on ships putting to sea until the royal ships had been filled was imposed in 1644 and repeated several times.<sup>16</sup>

Naval manning was also a problem for Sweden in the early seventeenth century. In the 1620s an attempt was made to create a naval manning system based on voluntary enlistment among the coastal population, but it failed as the conditions were not attractive enough and the navy continued to rely on conscription. In 1635 though, the *ständigt båtsmanshåll* system was introduced which created a standing reserve of men who were to assemble every year at the dockyard in Stockholm. Every coastal parish was to supply a quota of men and these were organised into regional companies and regiments.<sup>17</sup> This was a more attractive system of voluntary enlistment and one of its attractions may have been that service in the navy meant that the men could return home every winter, while service in the army often meant service in Germany for several years with limited chances of ever returning.

It therefore seems that of the northern European royal navies Denmark had fewest problems in manning the fleet in the early seventeenth century, although Sweden developed a more effective system

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<sup>14</sup> Jaap Bruijn & Els van Eyck van Heslinga, 'Seamen's Employment in the Netherlands (c. 1600–c. 1800)', *Mariner's Mirror*, 70 (1984), 7–20.

<sup>15</sup> David Goodman, *Spanish Naval Power, 1589–1665: Reconstruction and Defeat*, (Cambridge, 1997), 181–220.

<sup>16</sup> James, *Navy and Government*, 122.

<sup>17</sup> Otto Lybeck (ed.), *Svenska Flottans Historie*, (Malmö, 1942), I, 337–40.

in the late 1630s. The Danish method of naval conscription was essentially feudal, and with Danish society still largely organised along feudal lines there was less resistance to the practice. There was therefore less incentive to bureaucratised a system that continued to be reasonably effective.

### *The Effect on the Form of Government*

The development of modern navies, with large state-owned fleets financed and administered by increasingly large naval bureaucracies, often resulted in major changes in the way states were governed. Progress towards a more modern form of government is not strictly a measure of naval success, but the development of a modern state and the effective administration of a navy often went hand in hand and it is worth investigating whether Christian IV's navy had any effect in the development of a fiscal-military state in Denmark.

The biggest effect that the navy had on the form of government was essentially financial. The cost of the navy was one of the major causes of the financial collapse of the state, with expenditure rising from around 30 percent of the ordinary budget at the start of the reign to 60 percent at the end. The *len* system meant that the navy could initially be supplied more or less entirely in kind but, as the navy grew, increasingly more supplies had to be bought from private contractors and merchants. The economy of the state was therefore forced to change from basically an internal state economy based on the crown lands supplying virtually all the state's needs, to a more contractual system where goods and services were purchased from outside the state mechanism. The navy therefore played a large part in this transition from a domain state to a tax state, but there is also a major contradiction here, since the supply of naval materials and victuals from the *len* meant that the old system was maintained long after it had become outmoded as a means of financing the state as a whole.

Christian IV's navy had little direct impact on constitutional change during his reign. The increasing animosity between the king and *rigsråd* over the navy only served to reinforce the dyarchic nature of the Danish government and made any attempt at reform virtually impossible. The division between Crown and State at the end of his reign was greater than it had ever been. Very few changes were



made to the state administration during Christian IV's reign other than some minor tinkering with the *len* system. Under his rule the machinery of state finance had become factionalised and unworkable and the political leadership of the country had become confused and highly contentious.

The large size of the navy built up by Christian IV was one of the principal causes of the state being stretched to breaking point, but it was only after his death that any it resulted in any constitutional change. The establishment of the Admiralty College in 1655 was the first step towards the collegiate system of government that was later adopted.<sup>18</sup> The army had a much greater effect on the state bureaucracy. The reorganisation of the standing army in 1637 saw the creation of two new administrative bodies and a review of extraordinary taxation, resulting in funds being diverted from the centralised court and navy to the provincially based army.

The navy could also be said to have had some influence in the imposition of absolute rule, but only in a very indirect way. The nobility's control of naval supplies under the *len* system provided them with an easy excuse for the continuation of the *status quo* and proved a major obstacle to financial and administrative reform. After gaining greater powers through Frederik III's accession charter they effectively controlled all naval spending. However, their style of government in the 1650s, which can be seen as an attempt to return to the old feudal system that guaranteed their archaic privileges, did not prove to be a great success.<sup>19</sup> Attempts to cut the naval budget did little to improve the state's poor financial situation, and steadily falling *len* revenues and the cession of the Scanian provinces meant that a greater reliance had to be placed on taxation and on credit from private contractors. The financial deprivation was far worse than anything witnessed under Christian IV and resulted in widespread discontent about the way the nobility were running the country.

With greater reliance being placed on burghers and merchants to supply materials they became much more important in the financing

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<sup>18</sup> Although the absolute monarchy used a college administration, the Admiralty College of 1655 actually represented an increase in noble control of the navy. Gunner Lind, *Hæren og magten i Danmark 1614–1662*, (Odense, 1994), 280.

<sup>19</sup> K. J. V. Jespersen, 'Social Change and the Military Revolution in Early Modern Europe: Some Danish Evidence', *The Historical Journal*, 26:1 (1983), 1–13.

of the state, both directly through supplying goods on credit, and indirectly through taxation. Copenhagen, as the centre of the court and the navy, therefore developed disproportionately to the rest of the kingdom as its commerce grew. It was essentially a naval city, with most of its inhabitants either employed directly by the navy and arsenal, or indirectly in supplying goods and services. Despite the growing importance of the commonalty in propping up the state they were still barred from entering any positions of power in the government, which were jealously guarded by the nobility.<sup>20</sup>

The seamen, as well, were also becoming disheartened. Under the rule of Christian IV they had been well fed and clothed, and paid more or less their full wages. Under the nobility's rule they very rarely received full pay or rations, and mutiny and desertion became increasing problems. Even though there was little real danger of open revolt, such as happened in England in 1642, when the seamen sided with Parliament, there was definitely a growing resentment at the way the navy was administered by the nobility.

The position of the nobility worsened during the wars with Sweden between 1657–60. Their conduct during the war, including the leadership of the navy, was considered self-seeking and cowardly and their competence was seriously questioned. By the end of the war they were in such bad favour that change was inevitable. As a reward for saving the city from the Swedes in 1659 Frederik III awarded the burghers of Copenhagen the same privileges as the nobility and at the Estates General in 1660 the principle of a hereditary monarchy was established. The dyarchic form of government was at an end and an absolute monarchy took its place. The problems with naval finance, administration and leadership, which had their roots in Christian IV's reign, were by no means the only causes of discontent that brought about this change, but they were definitely contributory factors.

### *Conclusion*

Throughout this study we have seen that Christian IV was instrumental in building up the Danish navy to an impressive and unprece-

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<sup>20</sup> Apart from two burghers in the admiralty college.

dented strength, but paradoxically he was also ultimately responsible for its downfall. Had he abided by the wishes of the *rigsråd* it would have remained simply a powerful regional force, and most likely would have suffered defeat at the hands of Sweden even earlier. Despite its opposition Christian IV managed to build up a navy that, in terms of its ships and dockyard facilities, was one of the best in Europe. However, there were serious flaws. It was far larger than the economy could sustain and very nearly bankrupted the state. Its administration was inefficient and outmoded, and its leadership lay in the hands of a monarch who was politically and strategically naive.

These achievements and faults are closely allied to Christian IV's character traits. He liked to see the results of his efforts in physical form, which meant that he spent most of his time and energy concentrating on concrete matters, such as ships and dockyards, rather than more abstract concepts, such as administration and command structures. He was also frequently blinded by detail and devoted too much time on the minor details rather than looking at the bigger picture. He spent vast amounts of time considering the duties of minor craftsmen and the messing arrangements of ordinary seamen while failing to address his officers lacking any basic knowledge of seamanship or military training. He also lost interest if he was unable to achieve his ends quickly so even if he did want to reform the navy's higher administration it is unlikely that he would have had the skill or the patience to accomplish it.

In the dockyard a system of delegation was needed so that the Dockyard Admiral could maintain strategic control while his junior managers saw to the more mundane aspects of the job, but with Christian IV's fear of delegation this was simply not possible. He made his own position in the running of the navy indispensable to avoid losing any political control, but as a result he created a system that could not cope effectively in his absence. This fear of delegation can also be seen in the military control of the navy. Christian IV failed to appreciate the need to train his officers until it was too late and failed to introduce any effective system of command at sea. He deliberately appointed men to the post of *rigsadmiral* who knew little of naval matters so that they would pose no threat to his own authority, making the navy highly ineffective. It is not surprising therefore to find that he was one of the last monarchs to personally command his fleet at sea. He simply could not bear anyone else to take control.

The death of Christian IV in 1648 marked a significant turning point for the Danish navy. With so much of the administration dependent on the king's personal rule there was an inevitable crisis after his death. His successor Frederik III was a completely different character and had little interest in or knowledge of naval affairs. The nobility used this opportunity to extend their own powers and Frederik III's accession charter specifically limited the new king's authority over the navy and made possible the first steps towards a formal naval administration.<sup>21</sup>

The first stage of reform came in 1652 with the appointment of a *Holmens viceadmiral* to ease the workload at the dockyard. In 1655 the administration was radically transformed with the establishment of an Admiralty College. This consisted of the *rigsadmiral*, a *rentemester*, the *Holmens admiral*, the *Holmens viceadmiral*, three captains each responsible for victualling, shipbuilding and repair, and materials provision, a secretary, and two admiralty councillors concerned with commercial matters.<sup>22</sup> This was not the ultimate answer to the problem, and several changes were made in subsequent years, but at least there was now a formal structure with specific delegation of responsibilities. Despite the appointment of a dedicated naval treasurer for the first time, the organisation of naval finance still remained essentially the same. This changed in 1663 when a formal naval budget was fixed and proper accounting procedures were introduced at Bremerholm. Further changes were made in the 1670s when the navy's civil administration was separated totally from its military administration.<sup>23</sup>

Christian IV's belief that the navy was his own personal property can help to explain why naval reform was so difficult in Denmark. The naval administration remained very closely intertwined with the administration of the court. The victualling store was a joint body

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<sup>21</sup> Article 15 stated that the king was not to mobilise any part of the navy or send it anywhere without the express consent of the *rigsråd*. (H. D. Lind, *Kong Frederik den Tredjes Søgagt: Det dansk-norske søværns historie 1648–1670*, (København, 1896), 18–9.

<sup>22</sup> Instruks for admiralitetskollegiet på Bremerholm, 29 August 1655, and Forordning om fordelingen af opsynet på Bremerholm, 8 June 1656, V. A. Secher, *Corpus Constitutionum Danicæ*, (København, 1887–1918), V, 192–3 & 281–2.

<sup>23</sup> H. D. Lind, 'Medlemmerne i Admiralitetet og Kommissariaterne for Søetaten i Aarene 1655–1699', *Tidsskrift for Søvesen*, 93 (1922), 170–7; Lind, *Kong Frederik den Tredjes Søgagt*, 222.

supplying both court and navy, and the *klædekammer* similarly administered the payment of both court and naval personnel. The money that financed the navy came primarily from the Crown lands and the king's own purse, its officials were paid as members of the Court, and it was all designed, built and commanded under the direct control of the king. If the naval administration were separated then it would be seen as an admission by the king that the navy was in fact a separate instrument of state, and not just an adjunct to the royal court. This type of thinking was essentially still medieval in character and naturally hampered any progress towards a 'modern' administration.

Therefore, although many of the developments in the Danish navy echoed what was happening elsewhere in Europe in terms of creating what, on the surface, might seem to be a modern state navy, the king's continuing direct involvement ensured a fundamental structural difference. Christian IV's navy should not be seen as the precursor of a modern professional bureaucratic navy, but rather as the last fling of a medieval style of navy that was stretched to its ultimate limit.



## APPENDIX A

### SHIP LISTS

The ship lists given here include all vessels known to have been in the ownership of the Danish navy. They do not include hired vessels or prizes that were disposed of immediately. Displacement figures are those developed by Niels M. Probst and Jan Glete. They are largely indicative and are given only to the nearest 100 tons. Smaller warships under 100 tons have been given a nominal 50 tons and galleys 75 tons displacement. The number of cannon given is the maximum carried at any one time in a ship's lifetime.

The figures for number of crew represent the maximum combined total of seamen, gunners and soldiers allocated at some stage in a ship's life. These figures largely come from the victualling registers, which do not distinguish between different types of men. They were solely concerned with the total amount of victuals supplied. The numbers varied from year to year depending on the duties of the particular ships. In some cases the figure is inflated because it includes large numbers of seamen billeted in the winter months or large numbers of soldiers carried in wartime. In other cases the figures are low, sometimes with fewer crew than cannon, because registers do not exist for periods when the ship was fully commissioned. In some cases the figure also includes officers.

#### 1. Large Warships (over 1000 tons)

| <b>Name</b>            | <b>Entered<br/>service</b> | <b>Left<br/>Service</b> | <b>Displacement<br/>(tons)</b> | <b>Cannon</b> | <b>Crew</b> |
|------------------------|----------------------------|-------------------------|--------------------------------|---------------|-------------|
| <i>Fortuna</i>         | 1567                       | 1602                    | 2100                           | 68            |             |
| <i>Prindsen Barken</i> | 1583                       | 1598                    | 1200                           | 64            |             |
| <i>Samson</i>          | 1589                       | 1600                    | 1200                           | 62            |             |
| <i>Argo</i>            | 1601                       | 1635                    | 1200                           | 54            | 214         |
| <i>Tre kroner</i>      | 1604                       | 1624                    | 2100                           | 80            |             |
| <i>Recompens</i>       | 1614                       | 1636                    | 1100                           | 54            | 214         |
| <i>Patentia</i>        | 1616                       | 1644                    | 1100                           | 54            | 300         |
| <i>Store Sophia</i>    | 1627                       | 1645                    | 1300                           | 54            | 265         |
| <i>Trefoldighed</i>    | 1642                       | 1676                    | 1300                           | 60            | 265         |
| <i>Victoria</i>        | 1647                       | 1674                    | 1200                           | 56            | 280         |

Table 1 (*cont.*)

| <b>Name</b>            | <b>Entered<br/>service</b> | <b>Left<br/>Service</b> | <b>Displacement<br/>(tons)</b> | <b>Cannon</b> | <b>Crew</b> |
|------------------------|----------------------------|-------------------------|--------------------------------|---------------|-------------|
| <i>Hannibal</i>        | 1647                       | 1716                    | 1200                           | 60            | 280         |
| <i>Friderich</i>       | 1649                       | 1671                    | 1700                           | 86            |             |
| <i>Prins Christian</i> | 1650                       | 1679                    | 1400                           | 78            |             |
| <i>Sophie Amalie</i>   | 1650                       | 1680                    | 2000                           | 86            |             |

## 2. Medium Warships (501–1000 tons)

| <b>Name</b>                     | <b>Entered<br/>service</b> | <b>Left<br/>Service</b> | <b>Displacement<br/>(tons)</b> | <b>Cannon</b> | <b>Crew</b> |
|---------------------------------|----------------------------|-------------------------|--------------------------------|---------------|-------------|
| <i>Josua</i>                    | 1579                       | 1603                    | 1000                           | 48            | 205         |
| <i>Dragen</i>                   | 1580                       | 1601                    | 600                            | 42            | 106         |
| <i>Raphael</i>                  | 1582                       | 1645                    | 700                            | 22            | 135         |
| <i>Gideon</i>                   | 1584                       | 1617                    | 700                            | 38            | 154         |
| <i>Josaphat</i>                 | 1586                       | 1619                    | 800                            | 52            |             |
| <i>Hercules</i>                 | 1594                       | 1602                    | 800                            | 42            |             |
| <i>Victor</i>                   | 1598                       | 1636                    | 700                            | 44            | 150         |
| <i>Archa Rosa</i>               | 1603                       | 1622                    | 700                            | 38            |             |
| <i>St. Anna</i>                 | 1608                       | 1645                    | 900                            | 36            | 280         |
| <i>Justitia</i>                 | 1609                       | 1658                    | 800                            | 46            | 226         |
| <i>Röda Lejonet</i>             | 1611                       | 1611                    | 600                            | 26            | 122         |
| <i>Spes</i>                     | 1612                       | 1670                    | 900                            | 30            | 260         |
| <i>(Svenske) Hector</i>         | 1612                       | 1631                    | 700                            | 30            | 150         |
| <i>Sorte Rytter</i>             | 1620                       | 1627                    | 600                            | 40            | 150         |
| <i>Flensborg</i>                | 1621                       | 1630                    | 600                            | 20            | 120         |
| <i>Røde Løve</i>                | 1622                       | 1630                    | 900                            | 36            | 300         |
| <i>Lindormen</i>                | 1626                       | 1644                    | 700                            | 40            | 290         |
| <i>Oldenborg</i>                | 1628                       | 1644                    | 900                            | 42            | 290         |
| <i>Tre kroner</i>               | 1630                       | 1665                    | 700                            | 60            | 260         |
| <i>Norske Løve</i>              | 1634                       | 1666                    | 700                            | 52            | 260         |
| <i>Gak Med</i>                  | 1635                       | 1665                    | 600                            | 34            | 160         |
| <i>Sorte Rytter</i>             | 1636                       | 1685                    | 600                            | 52            | 195         |
| <i>Hvide Bjørn</i>              | 1638                       | 1658                    | 600                            | 42            | 154         |
| <i>Sorte Bjørn</i>              | 1640                       | 1673                    | 600                            | 38            | 120         |
| <i>Tre Løver</i>                | 1642                       | 1644                    | 700                            | 46            | 200         |
| <i>Fenix</i>                    | 1642                       | 1659                    | 600                            | 34            | 60          |
| <i>Graa Ulv</i>                 | 1642                       | 1659                    | 600                            | 36            | 160         |
| <i>Pelikanen</i>                | 1642                       | 1658                    | 600                            | 50            | 150         |
| <i>Papegojen / Stormarn</i>     | 1643                       | 1644                    | 600                            | 32            | 112         |
| <i>To Kroner</i><br>(Sw. Ørnen) | 1644                       | 1644                    | 600                            | 40            |             |
| <i>Delmenhorst</i>              | 1647                       | 1658                    | 600                            | 34            |             |
| <i>Røde Ulv</i>                 | 1648                       | 1650                    | 700                            | 48            |             |



## 3. Small Warships (up to 500 tons)

| <b>Name</b>                            | <b>Entered<br/>service</b> | <b>Left<br/>Service</b> | <b>Displacement<br/>(tons)</b> | <b>Cannon</b> | <b>Crew</b> |
|----------------------------------------|----------------------------|-------------------------|--------------------------------|---------------|-------------|
| <i>Dansk Vildman</i>                   | 1560                       | 1596                    | 300                            | 2             |             |
| <i>Hvide Rose Pinke</i>                | 1572                       | 1602                    | 50                             |               |             |
| <i>Gabriel</i>                         | 1579                       | 1601                    | 200                            | 12            | 80          |
| <i>St. Michael</i>                     | 1581                       | 1622                    | 500                            | 20            |             |
| <i>Lille Fortun</i>                    | 1583                       | 1605                    | 50                             |               |             |
| <i>Musen Pinke</i>                     | 1583                       | 1597                    | 50                             |               |             |
| <i>Blaa Due</i>                        | 1586                       | 1595                    | 200                            | 18            |             |
| <i>Hvide Due (Duen)</i>                | 1589                       | 1608                    | 400                            |               |             |
| <i>Falk von Bergen</i>                 | 1590                       | 1602                    | 300                            |               |             |
| <i>Blaa Løve</i>                       | 1590                       | 1607                    | 200                            |               |             |
| <i>Unge Hjort</i>                      | 1590                       | 1602                    | 100                            |               |             |
| <i>Barkings</i>                        | 1592                       | 1598                    | 200                            |               |             |
| <i>Papegoien</i>                       | 1592                       | 1604                    | 200                            |               |             |
| <i>Hollands Jomfru</i>                 | 1592                       | 1598                    | 100                            |               |             |
| <i>Gullands Grib</i>                   | 1593                       | 1598                    | 50                             | 6             |             |
| <i>Lybske Vildman<br/>(Lybskemand)</i> | 1593                       | 1605                    | 200                            |               | 24          |
| <i>Engelske Christoffer</i>            | 1593                       | 1596                    | 50                             | 6             |             |
| <i>Engelske Jonas</i>                  | 1593                       | 1602                    | 100                            | 18            |             |
| <i>Hector</i>                          | 1594                       | 1605                    | 300                            | 14            | 150         |
| <i>Røde Løve</i>                       | 1596                       | 1613                    | 200                            | 14            | 48          |
| <i>Angelibrandt (Angelica)</i>         | 1599                       | 1610                    | 50                             | 10            | 16          |
| <i>Charitas</i>                        | 1599                       | 1604                    | 50                             |               |             |
| <i>Trost</i>                           | 1602                       | 1653                    | 300                            | 12            | 80          |
| <i>Penitens</i>                        | 1602                       | 1630                    | 200                            | 14            | 10          |
| <i>St. Peter</i>                       | 1602                       | 1612                    | 200                            | 12            |             |
| <i>Norske Drage</i>                    | 1603                       | 1615                    | 100                            |               | 14          |
| <i>Leoparden</i>                       | 1605                       | 1629                    | 300                            | 22            | 15          |
| <i>(Grønlands) Katten</i>              | 1605                       | 1613                    | 50                             | 4             | 12          |
| <i>Markatten</i>                       | 1605                       | 1653                    | 300                            | 28            | 80          |
| <i>Turtleduen</i>                      | 1605                       | 1612                    | 200                            |               |             |
| <i>Gilliflower (Gillebert)</i>         | 1605                       | 1606                    | 50                             |               |             |
| <i>Stjernen</i>                        | 1606                       | 1611                    | 400                            | 22            |             |
| <i>Lindormen</i>                       | 1606                       | 1612                    | 400                            | 16            | 29          |
| <i>Charitas</i>                        | 1607                       | 1614                    | 200                            |               |             |
| <i>Linden</i>                          | 1607                       | 1607                    | 50                             |               |             |
| <i>Engelske Kütze<br/>(Kiedsen)</i>    | 1607                       | 1610                    | 50                             | 2             |             |
| <i>Dynkerker Skib</i>                  | 1607                       | 1610                    | 200                            | 6             |             |
| <i>Makarel</i>                         | 1607                       | 1612                    | 50                             | 6             |             |
| <i>Jonas</i>                           | 1608                       | 1622                    | 300                            | 18            |             |
| <i>Enhjømningen</i>                    | 1609                       | 1620                    | 400                            | 21            | 40          |
| <i>Krokodillen</i>                     | 1609                       | 1611                    | 400                            | 24            | 70          |

Table 3 (*cont.*)

| <b>Name</b>                                                            | <b>Entered<br/>service</b> | <b>Left<br/>Service</b> | <b>Displacement<br/>(tons)</b> | <b>Cannon</b> | <b>Crew</b> |
|------------------------------------------------------------------------|----------------------------|-------------------------|--------------------------------|---------------|-------------|
| <i>Herringnæs</i>                                                      | 1609                       | 1622                    | 400                            | 18            |             |
| <i>Store Lybske David</i>                                              | 1610                       | 1624                    | 400                            | 22            | 100         |
| <i>Fransk Skib</i>                                                     | 1610                       | 1610                    | 50                             |               |             |
| <i>Sorte Hund</i>                                                      | 1610                       | 1612                    | 200                            | 12            |             |
| <i>Jupiter</i>                                                         | 1610                       | 1625                    | 300                            | 16            | 130         |
| <i>Forlorne Søn</i>                                                    | 1610                       | 1611                    | 50                             |               |             |
| <i>Spurven</i>                                                         | 1610                       | 1610                    | 50                             |               |             |
| <i>Sorte Rytter</i>                                                    | 1610                       | 1610                    | 200                            |               |             |
| <i>Lille Bysse</i>                                                     | 1610                       | 1612                    | 100                            |               |             |
| <i>Store Bysse</i>                                                     | 1610                       | 1618                    | 200                            |               |             |
| <i>Gabriel</i>                                                         | 1611                       | 1645                    | 500                            | 16            | 80          |
| <i>Malkepigen (Elefanten<br/>from 1618)</i>                            | 1611                       | 1624                    | 500                            | 24            | 130         |
| <i>Concordia</i> (possibly<br>an early name<br>for <i>Recompens</i> ?) | 1611                       | 1611                    |                                |               |             |
| <i>Summa Summarum</i>                                                  | 1611                       | 1612                    | 50                             | 6             |             |
| <i>Svenske Jonas</i>                                                   | 1611                       | 1618                    | 400                            |               |             |
| <i>St. Peder</i>                                                       | 1611                       | 1622                    | 200                            |               |             |
| <i>Svenske Løve (Gula<br/>Lejonet)</i>                                 | 1612                       | 1613                    | 500                            | 26            |             |
| <i>Lamprenen</i>                                                       | 1612                       | 1626                    | 200                            |               | 84          |
| <i>Krabben</i>                                                         | 1612                       | 1619                    | 400                            | 12            |             |
| <i>Franciscus</i>                                                      | 1612                       | 1612                    | 100                            | 6             |             |
| <i>Blaa Orm</i>                                                        | 1612                       | 1620                    | 400                            | 20            |             |
| <i>Fides</i>                                                           | 1615                       | 1644                    | 400                            | 30            | 135         |
| <i>Nellebladet</i>                                                     | 1618                       | 1644                    | 400                            | 36            | 134         |
| <i>Havhesten</i>                                                       | 1618                       | 1644                    | 400                            | 26            | 82          |
| <i>Griben</i>                                                          | 1618                       | 1658                    | 300                            | 16            | 80          |
| <i>Patientia</i>                                                       | 1619                       | 1623                    | 300                            | 28            |             |
| <i>Nassau / Nassov Pris</i>                                            | 1621                       | 1630                    | 200                            |               | 60          |
| <i>Hummeren</i>                                                        | 1624                       | 1637                    | 400                            | 24            | 135         |
| <i>Svanen</i>                                                          | 1624                       | 1652                    | 500                            | 40            | 150         |
| <i>Postillion</i>                                                      | 1624                       | 1654                    | 200                            | 16            | 80          |
| <i>Sælhunden</i>                                                       | 1625                       | 1633                    | 200                            | 16            | 28          |
| <i>Flyvende Fisk</i>                                                   | 1625                       | 1657                    | 200                            | 16            | 60          |
| <i>Haren</i>                                                           | 1627                       | 1635                    | 200                            | 17            | 50          |
| <i>Mynden</i>                                                          | 1627                       | 1635                    | 200                            | 18            | 50          |
| <i>Wolgast Pinas</i>                                                   | 1628                       | 1630                    | 50                             |               |             |
| <i>Lammet</i>                                                          | 1630                       | 1654                    | 400                            | 32            | 160         |
| <i>Kronet Fisk</i>                                                     | 1630                       | 1644                    | 400                            | 32            | 135         |
| <i>Store Lykkepot</i>                                                  | 1630                       | 1659                    | 300                            | 36            | 140         |
| <i>Lille Lykkepot</i>                                                  | 1630                       | 1639                    | 200                            | 12            | 80          |

Table 3 (*cont.*)

| <b>Name</b>            | <b>Entered<br/>service</b> | <b>Left<br/>Service</b> | <b>Displacement<br/>(tons)</b> | <b>Cannon</b> | <b>Crew</b> |
|------------------------|----------------------------|-------------------------|--------------------------------|---------------|-------------|
| <i>To Løver</i>        | 1630                       | 1644                    | 400                            | 32            | 135         |
| <i>Tre Løver</i>       | 1630                       | 1637                    | 400                            | 38            | 135         |
| <i>Delmenhorst</i>     | 1633                       | 1644                    | 500                            | 44            | 134         |
| <i>Fenix</i>           | 1634                       | 1635                    | 200                            |               | 150         |
| <i>Følgesvenden</i>    | 1635                       | 1638                    | 300                            |               | 40          |
| <i>Snarensvend</i>     | 1638                       | 1658                    | 400                            | 30            | 90          |
| <i>Hollands Forgat</i> | 1641                       | 1653                    | 200                            | 26            | 36          |
| <i>Forlørne Søn</i>    | 1642                       | 1651                    | 300                            | 26            | 94          |
| <i>Paradis Fugle</i>   | 1643                       | 1644                    | 50                             |               |             |
| <i>Neptunus</i>        | 1644                       | 1644                    | 350                            | 28            | 80          |
| <i>Norske Fregat</i>   | 1644                       | 1658                    | 300                            | 26            | 72          |
| <i>Forgylte Bjørn</i>  | 1645                       | 1656                    | 500                            | 38            | 94          |
| <i>Charitas</i>        | 1645                       | 1645                    | 300                            |               |             |
| <i>Norske Galiot</i>   | 1645                       | 1645                    | 50                             |               | 16          |
| <i>St. Jacob</i>       | 1645                       | 1653                    | 50                             |               |             |
| <i>St. Michael</i>     | 1646                       | 1658                    | 300                            | 20            |             |
| <i>Røde Ræv</i>        | 1647                       | 1652                    | 500                            | 40            |             |

## 4. Galleys &amp; Jagts

| <b>Name</b>                                     | <b>Entered<br/>service</b> | <b>Left<br/>Service</b> | <b>Displacement<br/>(tons)</b> | <b>Cannon</b> | <b>Crew</b> |
|-------------------------------------------------|----------------------------|-------------------------|--------------------------------|---------------|-------------|
| <i>Jacob Galej</i>                              | 1577                       | 1601                    | 200                            | 24            | 58          |
| <i>David Galej</i>                              | 1580                       | 1598                    | 200                            | 28            | 58          |
| <i>Brand Jagt</i>                               | 1580                       | 1600                    | 75                             |               |             |
| <i>Salomon Galej</i>                            | 1580                       | 1599                    | 100                            | 10            |             |
| <i>Dronningens Jagt</i>                         | 1585                       | 1599                    | 75                             |               |             |
| <i>Aarhus Jagt</i>                              | 1587                       | 1599                    | 75                             |               |             |
| <i>Roersjagten</i>                              | 1591                       | 1603                    | 75                             |               |             |
| <i>Blekinge Galej</i>                           | 1599                       | 1604                    | 75                             |               |             |
| <i>Store Galej</i>                              | 1600                       | 1600                    | 200                            |               |             |
| <i>Norske Jagt (liden<br/>Norske Galej)</i>     | 1602                       | 1607                    | 75                             |               |             |
| <i>Leopardens Jagt</i>                          | 1607                       | 1607                    | 75                             |               |             |
| <i>St. Mikkel's Jagt</i>                        | 1607                       | 1607                    | 75                             |               |             |
| <i>Lille Katte Jagt</i>                         | 1607                       | 1613                    | 75                             | 4             |             |
| <i>Jægeren Galej</i>                            | 1611                       | 1621                    | 75                             |               | 10          |
| <i>Alexander</i>                                | 1612                       | 1618                    | 75                             |               | 10          |
| <i>Hans Østerlings Jagt<br/>(Østlings Jagt)</i> | 1614                       | 1622                    | 75                             |               |             |
| <i>Lindormen</i>                                | 1614                       | 1622                    | 75                             |               |             |
| <i>Skien Galej</i>                              | 1619                       | 1639                    | 75                             | 6             |             |

Table 4 (*cont.*)

| <b>Name</b>                                                 | <b>Entered<br/>service</b> | <b>Left<br/>Service</b> | <b>Displacement<br/>(tons)</b> | <b>Cannon</b> | <b>Crew</b> |
|-------------------------------------------------------------|----------------------------|-------------------------|--------------------------------|---------------|-------------|
| <i>Sorte Ravn,</i><br><i>Stavanger</i>                      | 1619                       | 1632                    | 200                            | 16            |             |
| <i>Varberg Jagt</i>                                         | 1619                       | 1642                    | 75                             |               | 28          |
| <i>Nat og Dag Galej</i>                                     | 1620                       | 1621                    | 75                             |               |             |
| <i>Vildmanden Galej</i>                                     | 1620                       | 1621                    | 75                             |               |             |
| <i>Sorte Bjørn</i>                                          | 1620                       | 1621                    | 75                             |               |             |
| <i>Sorte Katten Galej</i>                                   | 1620                       | 1621                    | 75                             |               |             |
| <i>Charitas Galej</i>                                       | 1620                       | 1621                    | 75                             |               | 70          |
| <i>Vildsvinet</i>                                           | 1620                       | 1637                    | 100                            |               | 30          |
| <i>Blaa Mynde Galej</i>                                     | 1620                       | 1629                    | 75                             |               | 30          |
| <i>St. Hans Galej</i>                                       | 1620                       | 1634                    | 100                            |               | 30          |
| <i>Kronet Galej (Oslo/<br/>Forgyldte Krone)</i>             | 1620                       | 1644                    | 75                             | 6             | 19          |
| <i>Dragen Galej</i>                                         | 1622                       | 1631                    | 75                             |               |             |
| <i>Sortedam Galej</i>                                       | 1623                       | 1627                    | 75                             |               |             |
| <i>Frederikstad Galej</i>                                   | 1624                       | 1629                    | 100                            |               | 19          |
| <i>Nattergal Jagt</i>                                       | 1624                       | 1624                    | 75                             | 9             |             |
| <i>Dragen Jagt</i><br><i>(Wormen) Ormen</i><br><i>Galej</i> | 1625                       | 1629                    | 75                             |               |             |
| <i>Salomon Jagt</i>                                         | 1626                       | 1628                    | 75                             |               |             |
| <i>Prindsens Jagt</i>                                       | 1626                       | 1644                    | 75                             | 6             | 4           |
| <i>Liden Ny Jagt</i>                                        | 1626                       | 1631                    | 75                             |               | 12          |
| <i>Charitas Galej</i>                                       | 1627                       | 1631                    | 100                            | 12            | 70          |
| <i>Marstrands Plage</i><br><i>Galej</i>                     | 1627                       | 1645                    | 200                            |               | 80          |
| <i>St. Olaf Galej</i>                                       | 1627                       | 1638                    | 100                            |               | 24          |
| <i>Søndervigs Galej</i>                                     | 1627                       | 1629                    | 75                             |               | 30          |
| <i>Agdesidens Galej</i>                                     | 1627                       | 1628                    | 75                             |               | 30          |
| <i>Røde Løve Galej</i>                                      | 1627                       | 1637                    | 100                            | 9             | 30          |
| <i>St. Per Galej</i>                                        | 1627                       | 1627                    | 75                             |               |             |
| <i>Lybske Jagt</i>                                          | 1627                       | 1627                    | 75                             |               |             |
| <i>Flyvende Hjort</i>                                       | 1627                       | 1653                    | 100                            | 14            | 35          |
| <i>Tre Kroner Galej</i><br><i>(Odense)</i>                  | 1627                       | 1634                    | 75                             | 6             | 25          |
| <i>St. Peter Galej</i>                                      | 1627                       | 1648                    | 100                            | 8             | 30          |
| <i>St. Johan Galej</i>                                      | 1627                       | 1631                    | 75                             |               |             |
| <i>Bergens Galej</i><br><i>(Sorte Ravn)</i>                 | 1628                       | 1637                    | 75                             |               | 80          |
| <i>Gunde Langes Jagt</i>                                    | 1628                       | 1648                    | 75                             |               | 6           |
| <i>Nordlandske (Løve)</i><br><i>Galej</i>                   | 1628                       | 1631                    | 75                             |               | 70          |
| <i>Fortuna Galej</i>                                        | 1628                       | 1632                    | 75                             |               |             |

Table 4 (*cont.*)

| <b>Name</b>                                             | <b>Entered<br/>service</b> | <b>Left<br/>Service</b> | <b>Displacement<br/>(tons)</b> | <b>Cannon</b> | <b>Crew</b> |
|---------------------------------------------------------|----------------------------|-------------------------|--------------------------------|---------------|-------------|
| <i>Galej Stjernen</i><br>( <i>Ekers Galej</i> )         | 1628                       | 1632                    | 75                             |               | 28          |
| <i>Mogens Gyldenstjerns<br/>Jagt</i>                    | 1628                       | 1628                    | 75                             |               |             |
| <i>Samson (Samsing)<br/>Galej</i>                       | 1628                       | 1645                    | 100                            | 8             | 34          |
| <i>Rosen Galej</i>                                      | 1628                       | 1645                    | 100                            | 11            | 34          |
| <i>Roerlands Galej</i>                                  | 1629                       | 1629                    | 75                             |               |             |
| <i>Krokodillen Galej</i>                                | 1629                       | 1633                    | 100                            | 12            | 21          |
| <i>Blaa Løve Galej</i>                                  | 1629                       | 1629                    | 75                             |               |             |
| <i>Flyvende Weder</i>                                   | 1630                       | 1630                    | 75                             | 6             | 23          |
| <i>K Maj Liden Jagt</i><br>( <i>Spil Jagt?</i> )        | 1631                       | 1656                    | 75                             |               | 21          |
| <i>Ny Løchsted Jagt</i>                                 | 1631                       | 1633                    | 75                             |               |             |
| <i>Christians Ark</i>                                   | 1633                       | 1658                    | 200                            | 12            | 40          |
| <i>Jomfru Svenden</i>                                   | 1636                       | 1653                    | 75                             | 6             | 22          |
| <i>Linden Galej</i>                                     | 1636                       | 1653                    | 75                             | 6             | 16          |
| <i>Dybendal</i>                                         | 1636                       | 1653                    | 75                             | 9             | 24          |
| <i>Højenhald</i>                                        | 1636                       | 1656                    | 100                            | 12            | 28          |
| <i>Ømen</i>                                             | 1636                       | 1653                    | 75                             | 6             | 17          |
| <i>St. Jørgen Jagt</i>                                  | 1636                       | 1658                    | 75                             | 6             | 10          |
| <i>Ny Kolding Galej</i>                                 | 1640                       | 1648                    | 75                             |               | 15          |
| <i>Hollands Galej</i>                                   | 1642                       | 1648                    | 75                             |               | 15          |
| <i>Prindsens Ny Jagt</i><br>( <i>Gule Æble</i> )        | 1643                       | 1665                    | 100                            | 10            | 20          |
| <i>Prindsens Skærbaad /<br/>Prindsens Spil<br/>Jagt</i> | 1643                       | 1647                    | 75                             |               | 5           |
| <i>Rebekka</i>                                          | 1643                       | 1648                    | 75                             |               | 12          |
| <i>Lybske Fortuna</i>                                   | 1643                       | 1648                    | 75                             |               | 9           |
| <i>Spil Jagt</i>                                        | 1644                       | 1660                    | 75                             |               | 7           |
| <i>Haabet</i>                                           | 1644                       | 1647                    | 75                             |               | 16          |
| <i>Blaa Due</i>                                         | 1644                       | 1653                    | 100                            | 10            | 7           |
| <i>Svenske Struds</i>                                   | 1644                       | 1648                    | 75                             |               | 7           |
| <i>Bernt Ornings Jagt</i>                               | 1645                       | 1648                    | 75                             |               | 7           |
| <i>Post Rytteren</i><br>( <i>Post Hesten</i> )          | 1645                       | 1646                    | 75                             |               | 36          |
| <i>Jokum Becks Jagt</i>                                 | 1645                       | 1650                    | 75                             |               | 4           |
| <i>Flyvende Pil</i>                                     | 1647                       | 1653                    | 75                             | 6             |             |
| <i>Søbladet Jagt</i>                                    | 1648                       | 1658                    | 200                            | 12            | 23          |
| <i>Hannibal Jagt</i>                                    | 1648                       | 1658                    | 75                             |               |             |

## 5. Dockyard Vessels

| <b>Name</b>                                                                 | <b>Entered service</b> | <b>Left Service</b> | <b>Displacement (tons)</b> | <b>Cannon</b> | <b>Crew</b> |
|-----------------------------------------------------------------------------|------------------------|---------------------|----------------------------|---------------|-------------|
| <i>Store Pram</i><br>( <i>Gammel Pram</i> )<br><i>Fladlusen</i> (from 1634) | 1619                   | 1648                | 300                        |               | 40          |
| <i>Skieltusen</i>                                                           | 1626                   | 1636                | 50                         |               |             |
| <i>Første Pram-Arche Noa</i>                                                | 1641                   | 1665                | 300                        | 26            | 80          |
| <i>Anden Pram – Noa Ark</i>                                                 | 1641                   | 1665                | 300                        | 26            | 90          |

## 6. Transport Ships

| <b>Name</b>                    | <b>Entered service</b> | <b>Left Service</b> | <b>Crew</b> |
|--------------------------------|------------------------|---------------------|-------------|
| <i>Graa Falk</i>               | 1577                   | 1609                | 14          |
| <i>Den Lille Engel</i>         | 1580                   | 1598                |             |
| <i>Højeren</i>                 | 1586                   | 1600                | 10          |
| <i>Svanen</i>                  | 1590                   | 1599                |             |
| <i>Gamle Hjort</i>             | 1590                   | 1599                |             |
| <i>Hanen</i>                   | 1591                   | 1608                | 10          |
| <i>Hinden</i>                  | 1593                   | 1612                | 18          |
| <i>Uglen</i>                   | 1593                   | 1600                | 10          |
| <i>Rolands Esping</i>          | 1593                   | 1598                |             |
| <i>Engelske Grib</i>           | 1593                   | 1599                |             |
| <i>Wolgers Esping</i>          | 1594                   | 1602                |             |
| <i>Holmens Skøjte</i>          | 1594                   | 1621                |             |
| <i>Karudsen</i>                | 1595                   | 1603                |             |
| <i>Pram</i>                    | 1597                   | 1597                |             |
| <i>Pram</i>                    | 1599                   | 1599                |             |
| <i>Neptunus</i>                | 1599                   | 1603                |             |
| <i>Raabukken</i>               | 1599                   | 1599                |             |
| <i>Lilium Pertit</i>           | 1599                   | 1602                |             |
| <i>Halve Maane</i>             | 1599                   | 1603                |             |
| <i>Lollandske Bonde / Baad</i> | 1599                   | 1611                | 4           |
| <i>Hollander Skib</i>          | 1601                   | 1601                |             |
| <i>Rødby Skude</i>             | 1601                   | 1615                | 4           |
| <i>Norske Skude</i>            | 1601                   | 1604                |             |
| <i>Skabo Krejer</i>            | 1601                   | 1604                | 3           |
| <i>Lollands Skude</i>          | 1602                   | 1613                | 4           |
| <i>Danzig Skude</i>            | 1602                   | 1604                |             |
| <i>Fortuna</i> (ex warship)    | 1603                   | 1607                |             |
| <i>Dragen</i>                  | 1603                   | 1610                |             |

Table 6 (*cont.*)

| <b>Name</b>                       | <b>Entered service</b> | <b>Left Service</b> | <b>Crew</b> |
|-----------------------------------|------------------------|---------------------|-------------|
| <i>Forgyldte Hvalfisk</i>         | 1604                   | 1605                |             |
| <i>Brunfisken</i>                 | 1605                   | 1611                | 8           |
| <i>Ørnen</i>                      | 1606                   | 1620                | 50          |
| <i>Grøn Fisken (Grindfisken?)</i> | 1607                   | 1611                |             |
| <i>Pelikanen</i>                  | 1607                   | 1607                |             |
| <i>Wismar Skude</i>               | 1607                   | 1615                | 15          |
| <i>Grønlands Bark</i>             | 1607                   | 1607                |             |
| <i>Gribswald Pinke</i>            | 1609                   | 1609                | 5           |
| <i>Hvide Falk</i>                 | 1611                   | 1623                | 8           |
| <i>Hollands Bysse</i>             | 1611                   | 1618                | 13          |
| <i>Listige (Lybske) Fortuna</i>   | 1611                   | 1613                |             |
| <i>Lybske Engel</i>               | 1611                   | 1611                | 6           |
| <i>Lybske Skude</i>               | 1611                   | 1612                | 10          |
| <i>Helig Trefoldigheden</i>       | 1611                   | 1617                |             |
| <i>Lybske Vildman</i>             | 1611                   | 1611                |             |
| <i>Forgylte Hane</i>              | 1611                   | 1612                |             |
| <i>Hollands Turtleduen</i>        | 1611                   | 1612                |             |
| <i>Nordlands Bysse</i>            | 1611                   | 1611                |             |
| <i>Hvide Hund</i>                 | 1611                   | 1612                |             |
| <i>Hollandske Pinas</i>           | 1611                   | 1612                | 10          |
| <i>Embter Prise</i>               | 1611                   | 1612                |             |
| <i>Svenske Rose</i>               | 1611                   | 1618                |             |
| <i>Jægeren</i>                    | 1611                   | 1622                | 10          |
| <i>Langesund Skude</i>            | 1611                   | 1612                |             |
| <i>Kalmar Skude</i>               | 1611                   | 1612                |             |
| <i>Lybske Krejer</i>              | 1611                   | 1622                | 7           |
| <i>Hollands Paafuglen</i>         | 1611                   | 1611                |             |
| <i>Haabet</i>                     | 1611                   | 1612                |             |
| <i>Kieler Pris</i>                | 1611                   | 1618                | 10          |
| <i>Kronfisken</i>                 | 1611                   | 1612                |             |
| <i>Hjorten</i>                    | 1611                   | 1613                | 10          |
| <i>Svensk Fyrblase</i>            | 1611                   | 1612                |             |
| <i>Wismar Krejer</i>              | 1611                   | 1612                |             |
| <i>Svanen</i>                     | 1612                   | 1621                | 6           |
| <i>Lille Lybske David</i>         | 1612                   | 1616                | 10          |
| <i>Jonas</i>                      | 1612                   | 1612                |             |
| <i>Ravn</i>                       | 1612                   | 1612                | 11          |
| <i>Falken</i>                     | 1612                   | 1612                | 11          |
| <i>Munken</i>                     | 1612                   | 1612                | 10          |
| <i>havhesten</i>                  | 1612                   | 1612                | 11          |
| <i>Svalen</i>                     | 1612                   | 1612                | 11          |
| <i>Gotenborg Skude</i>            | 1613                   | 1614                |             |
| <i>Løven</i>                      | 1613                   | 1613                |             |

Table 6 (*cont.*)

| <b>Name</b>                            | <b>Entered service</b> | <b>Left Service</b> | <b>Crew</b> |
|----------------------------------------|------------------------|---------------------|-------------|
| <i>Saxkjøbing Skude</i>                | 1614                   | 1629                |             |
| <i>Ribe Pris</i>                       | 1614                   | 1622                | 8           |
| <i>Lybske (Pris) Skude</i>             | 1614                   | 1628                | 6           |
| <i>St Maria</i>                        | 1615                   | 1615                |             |
| <i>Samson (Samsing)</i>                | 1616                   | 1623                | 14          |
| <i>Ny Haderslev Skude</i>              | 1616                   | 1652                | 11          |
| <i>Fortun</i>                          | 1617                   | 1617                |             |
| <i>Haabet (Lange Hollander)</i>        | 1617                   | 1636                | 28          |
| <i>Engel Gabriel</i>                   | 1618                   | 1622                |             |
| <i>Gammel Haderslev Skude</i>          | 1618                   | 1628                | 12          |
| <i>Ploven</i>                          | 1618                   | 1618                |             |
| <i>Osterskuden</i>                     | 1618                   | 1618                |             |
| <i>Hollands Fløjte</i>                 | 1619                   | 1627                |             |
| <i>Præsten</i>                         | 1619                   | 1619                |             |
| <i>Køge Krejer</i>                     | 1619                   | 1621                |             |
| <i>Skotske Pris</i>                    | 1620                   | 1622                | 5           |
| <i>Stavanger Pris Bojert</i>           | 1620                   | 1625                | 7           |
| <i>Kolding Skibet</i>                  | 1620                   | 1627                | 15          |
| <i>Ystad Skibet</i>                    | 1620                   | 1631                | 16          |
| <i>Norske (Pris) Bojert (Bojerten)</i> | 1621                   | 1633                |             |
| <i>Hollands Jæger (Jægeren)</i>        | 1621                   | 1638                | 9           |
| <i>Harling Pris</i>                    | 1621                   | 1621                |             |
| <i>Kørsør Skude</i>                    | 1621                   | 1629                | 8           |
| <i>Røde Hund</i>                       | 1621                   | 1621                |             |
| <i>Norsk Skovpris</i>                  | 1621                   | 1621                |             |
| <i>Hollands Bojert</i>                 | 1621                   | 1621                | 5           |
| <i>Hollands Bysse</i>                  | 1621                   | 1622                |             |
| <i>Harlingen Bysse</i>                 | 1621                   | 1622                | 7           |
| <i>Røde Løve (whaler)</i>              | 1621                   | 1621                | 300         |
| <i>Hvide Løve (whaler)</i>             | 1621                   | 1622                | 110         |
| <i>Hvide Bjørn</i>                     | 1622                   | 1622                |             |
| <i>Krisser</i>                         | 1622                   | 1622                |             |
| <i>Røde Hane</i>                       | 1622                   | 1622                |             |
| <i>Hvide Lamb</i>                      | 1622                   | 1623                |             |
| <i>Southkiell</i>                      | 1622                   | 1622                |             |
| <i>Ravnen</i>                          | 1622                   | 1625                | 6           |
| <i>Hvide Svan</i>                      | 1622                   | 1622                | 6           |
| <i>De Libste</i>                       | 1622                   | 1622                |             |
| <i>Paafuglen</i>                       | 1623                   | 1623                |             |
| <i>Enhjørning (Pris) Skude</i>         | 1625                   | 1628                | 10          |
| <i>Bentis Liden Ny Skib</i>            | 1626                   | 1627                |             |
| <i>Gabriel Fløjte</i>                  | 1627                   | 1627                | 60          |
| <i>Bredal Pris</i>                     | 1627                   | 1628                |             |



Table 6 (*cont.*)

| <b>Name</b>                               | <b>Entered service</b> | <b>Left Service</b> | <b>Crew</b> |
|-------------------------------------------|------------------------|---------------------|-------------|
| <i>Ekefjord Skude</i>                     | 1627                   | 1627                | 6           |
| <i>Halmsted Skude</i>                     | 1627                   | 1627                | 30          |
| <i>Rostocker Pris Skude</i>               | 1627                   | 1629                | 10          |
| <i>Jægeren Skude</i>                      | 1627                   | 1629                | 8           |
| <i>Oldborrig (Aalborg) Skude</i>          | 1627                   | 1628                | 6           |
| <i>Hvide Svan Skude (Lille Svan Pris)</i> | 1628                   | 1629                | 8           |
| <i>K Maj Bojert</i>                       | 1628                   | 1628                | 10          |
| <i>K Maj Rostock Pris (Spes?)</i>         | 1628                   | 1628                | 8           |
| <i>Den Lille Buck</i>                     | 1628                   | 1628                |             |
| <i>Hulemmer Skib</i>                      | 1628                   | 1628                |             |
| <i>Jernbucker</i>                         | 1628                   | 1628                |             |
| <i>Steen Skude</i>                        | 1628                   | 1628                |             |
| <i>Ny Kolberg Pris</i>                    | 1628                   | 1628                |             |
| <i>Elefanten Pris</i>                     | 1628                   | 1628                |             |
| <i>Vandhunden (Pris)</i>                  | 1628                   | 1629                |             |
| <i>Gule Løve</i>                          | 1629                   | 1630                | 7           |
| <i>Ligreb</i>                             | 1629                   | 1630                |             |
| <i>Blaa Due (Danziger Pris)</i>           | 1629                   | 1629                |             |
| <i>Oranjeboom</i>                         | 1629                   | 1629                |             |
| <i>Peder Brons Smakke</i>                 | 1629                   | 1629                |             |
| <i>Daniel Troies Bojert</i>               | 1629                   | 1629                |             |
| <i>Hollands Pris Bojert</i>               | 1629                   | 1636                | 9           |
| <i>Peder Boringholms Krejer</i>           | 1629                   | 1630                |             |
| <i>Forgylte Løve Bojert</i>               | 1630                   | 1630                |             |
| <i>Jørgen Switzens Krejer</i>             | 1630                   | 1630                |             |
| <i>Forgyldte Løve Pris</i>                | 1630                   | 1630                |             |
| <i>Lille Ny Bojert</i>                    | 1630                   | 1630                |             |
| <i>St. Maria Hamburger Pris</i>           | 1630                   | 1630                |             |
| <i>Hamburger Pris Bojert</i>              | 1630                   | 1633                |             |
| <i>Krigsmanden</i>                        | 1630                   | 1634                | 10          |
| <i>Holstenpris</i>                        | 1630                   | 1630                |             |
| <i>Fortuna Bojert</i>                     | 1631                   | 1648                | 12          |
| <i>St. Maria Bojert</i>                   | 1631                   | 1657                | 12          |
| <i>Hamburger Fortuna</i>                  | 1631                   | 1648                | 13          |
| <i>Stingsotten</i>                        | 1631                   | 1631                |             |
| <i>Hollands Pris Krejer</i>               | 1631                   | 1639                |             |
| <i>Skænd Bojert</i>                       | 1632                   | 1633                |             |
| <i>Blod Hunden</i>                        | 1632                   | 1633                |             |
| <i>Solen</i>                              | 1632                   | 1632                |             |
| <i>Store Esping</i>                       | 1633                   | 1633                |             |
| <i>Sellsøe Pram</i>                       | 1633                   | 1633                |             |
| <i>Graa Hest</i>                          | 1633                   | 1639                | 9           |
| <i>St. Peder (Gammel Hollands Pris)</i>   | 1633                   | 1636                |             |

Table 6 (*cont.*)

| <b>Name</b>                             | <b>Entered service</b> | <b>Left Service</b> | <b>Crew</b> |
|-----------------------------------------|------------------------|---------------------|-------------|
| <i>St Peder</i>                         | 1633                   | 1633                |             |
| <i>Samsing (Samson) Pris</i>            | 1633                   | 1634                |             |
| <i>Jonas Hamburger Pris</i>             | 1634                   | 1634                |             |
| <i>Sundby Færge</i>                     | 1634                   | 1634                |             |
| <i>Hollands Fortuna (Hollands Pris)</i> | 1634                   | 1638                | 12          |
| <i>Haabet Pris</i>                      | 1635                   | 1649                | 20          |
| <i>Hollands Pris Skude</i>              | 1635                   | 1653                | 9           |
| <i>Rosen Bomb</i>                       | 1635                   | 1635                |             |
| <i>Hollands Bysse</i>                   | 1637                   | 1648                | 11          |
| <i>Stavanger Pris Bojert</i>            | 1638                   | 1648                | 8           |
| <i>St. Peder Pris</i>                   | 1638                   | 1640                |             |
| <i>Stumpet Dorette</i>                  | 1638                   | 1648                | 38          |
| <i>St. Jørgen Pris Skude</i>            | 1638                   | 1638                |             |
| <i>Hamborg Christoffer</i>              | 1639                   | 1639                |             |
| <i>St. Christopher</i>                  | 1639                   | 1639                |             |
| <i>Dynkerker Bojert</i>                 | 1639                   | 1658                | 20          |
| <i>Forgyldte Sol</i>                    | 1639                   | 1639                |             |
| <i>Pinadtsen</i>                        | 1639                   | 1639                |             |
| <i>Vildkatten</i>                       | 1639                   | 1641                |             |
| <i>St. Alexander</i>                    | 1639                   | 1640                |             |
| <i>Engelske Skib</i>                    | 1639                   | 1639                |             |
| <i>Linden</i>                           | 1640                   | 1640                | 10          |
| <i>Hvide Løve</i>                       | 1642                   | 1675                | 14          |
| <i>Makarel</i>                          | 1642                   | 1643                | 9           |
| <i>Laurids Chrstensen's Skib</i>        | 1642                   | 1642                |             |
| <i>Nattergalen</i>                      | 1642                   | 1643                | 10          |
| <i>Dugbaaden</i>                        | 1642                   | 1644                | 7           |
| <i>Falken</i>                           | 1642                   | 1643                | 7           |
| <i>Nyborg Skude</i>                     | 1643                   | 1644                |             |
| <i>Svensk Pris Bojert (Fortuna)</i>     | 1643                   | 1647                | 9           |
| <i>Røde Løve</i>                        | 1643                   | 1645                |             |
| <i>Galioten Den Sorte Hund</i>          | 1644                   | 1674                | 12          |
| <i>Neldebladet</i>                      | 1644                   | 1645                |             |
| <i>Norske Hophill</i>                   | 1644                   | 1644                |             |
| <i>Magelos</i>                          | 1644                   | 1644                |             |
| <i>Kieler Fjord</i>                     | 1644                   | 1644                |             |
| <i>K Maj Galiot</i>                     | 1644                   | 1644                | 14          |
| <i>Amager</i>                           | 1645                   | 1646                | 23          |
| <i>Fortuna Brander</i>                  | 1645                   | 1648                | 9           |
| <i>Svanen</i>                           | 1645                   | 1645                |             |
| <i>Emaus</i>                            | 1645                   | 1645                |             |
| <i>Svensk Skude St. Jacob</i>           | 1645                   | 1645                | 10          |
| <i>Jonas</i>                            | 1647                   | 1647                |             |

## 7. Armed Merchantmen Hired During the Torstensson War (1643–1645)

| <b>Name</b>                | <b>Cannon</b> | <b>Crew</b> | <b>Home Port</b> |
|----------------------------|---------------|-------------|------------------|
| <i>St. Oluf</i>            | 20            | 51          | Drammen          |
| <i>St. Anna</i>            | 22            | 66          | Skien            |
| <i>St. Catarina</i>        | 20            | 60          | Skien            |
| <i>Enhjørningen</i>        | 18            | 54          | Skien            |
| <i>Tønsberg Fregat</i>     | 16            | 48          | Tønsberg         |
| <i>Engel Malta</i>         | 20            | 60          | Tønsberg         |
| <i>Engel Gabriel</i>       | 18            | 54          | Christiania      |
| <i>Norske Fregat</i>       | 14            | 42          | Christiania      |
| <i>Norske Løve</i>         | 20            | 70          | Christiania      |
| <i>St. Mathias</i>         | 22            | 64          | Frederikstadt    |
| <i>Spes</i>                | 6             | 26          | Kongelv          |
| <i>St. Jan (St. Johan)</i> | 6             | 15          | Bergen           |
| <i>St. Sophia</i>          | 18            | 70          | Tønsberg         |
| <i>Lindormen</i>           | 6             | 16          | Drammen          |
| <i>Prins Christian</i>     | 18            | 70          | Copenhagen       |
| <i>Josva</i>               | 20            | 56          | Copenhagen       |
| <i>Rodtganz</i>            | 18            | 70          | Copenhagen       |
| <i>Unge Ulv</i>            | 7             | 30          | Copenhagen       |
| <i>Emanuel</i>             | 26            | 70          | Copenhagen       |
| <i>Forgylt Stokfisk</i>    | 26            | 80          | Copenhagen       |
| <i>Tre Løver</i>           | ?             | ?           | Copenhagen       |
| <i>Røde Ulv</i>            | 48            | ?           | Copenhagen       |
| <i>St. Peder</i>           | 18            | 100         | Nyborg           |
| <i>Jordan</i>              | ?             | ?           | Copenhagen       |
| <i>St. Jacob</i>           | 16            | 70          | Malmö            |
| <i>Raphael</i>             | 18            | 70          | Copenhagen       |
| <i>Store St. Jacob</i>     | 18            | 70          | Christianshavn   |
| <i>Springende Hjort</i>    | ?             | ?           | Christianshavn   |
| <i>Forgylte Hjort</i>      | ?             | ?           | Christianshavn   |
| <i>Springende Hind</i>     | ?             | ?           | Christianshavn   |
| <i>Galioten</i>            | ?             | ?           | Helsingør        |
| <i>Haabet</i>              | ?             | ?           | Copenhagen       |
| <i>Gullands Lam</i>        | 18            | ?           | Gulland          |
| <i>Sorte Rytter</i>        | 30            | ?           | Halmstad         |
| <i>St Michael</i>          | 20            | 32          | Aarhus           |



## APPENDIX B

### COMPARATIVE STRENGTH OF THE DANISH AND SWEDISH NAVIES

The figures given in this appendix represent a revision to the data presented in Jan Glete's *Navies and Nations* and are those used to create Figures 6 and 7 in Chapter Five. The Danish figures are based on the author's research, using displacement figures estimated by Niels M. Probst and Jan Glete. The Swedish figures are entirely Jan Glete's revised figures as of August 2005, kindly supplied to the author. In keeping with the methodology used in *Navies and Nations*, only vessels of 100 tons displacement or more are included. A small number of the larger Danish galleys have also been integrated into the figures for the smaller warships of 100–500 tons.

1595

| Tonnage      | Denmark      |              | Sweden       |              |
|--------------|--------------|--------------|--------------|--------------|
|              | No. of Ships | Displacement | No. of Ships | Displacement |
| 2001–2500    | 1            | 2100         | 0            | 0            |
| 1501–2000    | 0            | 0            | 1            | 2000         |
| 1001–1500    | 2            | 2400         | 0            | 0            |
| 501–1000     | 6            | 4600         | 4            | 2800         |
| 100–500      | 14           | 3300         | 12           | 3000         |
| <b>Total</b> | <b>23</b>    | <b>12400</b> | <b>17</b>    | <b>7800</b>  |

1600

| Denmark      |              |              | Sweden       |              |
|--------------|--------------|--------------|--------------|--------------|
| Tonnage      | No. of Ships | Displacement | No. of Ships | Displacement |
| 2001–2500    | 1            | 2100         | 0            | 0            |
| 1501–2000    | 0            | 0            | 1            | 2000         |
| 1001–1500    | 1            | 1200         | 0            | 0            |
| 501–1000     | 7            | 5300         | 13           | 8900         |
| 100–500      | 11           | 2700         | 42           | 12900        |
| <b>Total</b> | <b>20</b>    | <b>11300</b> | <b>56</b>    | <b>23800</b> |

1605

| Denmark      |              |              | Sweden       |              |
|--------------|--------------|--------------|--------------|--------------|
| Tonnage      | No. of Ships | Displacement | No. of Ships | Displacement |
| 2001–2500    | 1            | 2100         | 0            | 0            |
| 1501–2000    | 0            | 0            | 0            | 0            |
| 1001–1500    | 1            | 1200         | 0            | 0            |
| 501–1000     | 5            | 3600         | 16           | 11500        |
| 100–500      | 13           | 3400         | 52           | 15800        |
| <b>Total</b> | <b>20</b>    | <b>10300</b> | <b>68</b>    | <b>27300</b> |

1610

| Denmark      |              |              | Sweden       |              |
|--------------|--------------|--------------|--------------|--------------|
| Tonnage      | No. of Ships | Displacement | No. of Ships | Displacement |
| 2001–2500    | 1            | 2100         | 0            | 0            |
| 1501–2000    | 0            | 0            | 0            | 0            |
| 1001–1500    | 1            | 1200         | 0            | 0            |
| 501–1000     | 7            | 5300         | 11           | 8200         |
| 100–500      | 23           | 6400         | 49           | 15600        |
| <b>Total</b> | <b>32</b>    | <b>15000</b> | <b>60</b>    | <b>23800</b> |

1615

| Denmark      |              |              | Sweden       |              |
|--------------|--------------|--------------|--------------|--------------|
| Tonnage      | No. of Ships | Displacement | No. of Ships | Displacement |
| 2001-2500    | 1            | 2100         | 0            | 0            |
| 1501-2000    | 0            | 0            | 0            | 0            |
| 1001-1500    | 2            | 2300         | 0            | 0            |
| 501-1000     | 9            | 6900         | 5            | 4100         |
| 100-500      | 20           | 6700         | 25           | 8900         |
| <b>Total</b> | <b>32</b>    | <b>18000</b> | <b>30</b>    | <b>13000</b> |

1620

| Denmark      |              |              | Sweden       |              |
|--------------|--------------|--------------|--------------|--------------|
| Tonnage      | No. of Ships | Displacement | No. of Ships | Displacement |
| 2001-2500    | 1            | 2100         | 0            | 0            |
| 1501-2000    | 0            | 0            | 0            | 0            |
| 1001-1500    | 3            | 3400         | 1            | 1100         |
| 501-1000     | 8            | 6000         | 7            | 5500         |
| 100-500      | 21           | 7200         | 26           | 9500         |
| <b>Total</b> | <b>33</b>    | <b>18700</b> | <b>34</b>    | <b>16100</b> |

1625

| Denmark      |              |              | Sweden       |              |
|--------------|--------------|--------------|--------------|--------------|
| Tonnage      | No. of Ships | Displacement | No. of Ships | Displacement |
| 2001-2500    | 0            | 0            | 0            | 0            |
| 1501-2000    | 0            | 0            | 0            | 0            |
| 1001-1500    | 3            | 3400         | 1            | 1500         |
| 501-1000     | 9            | 6800         | 12           | 8800         |
| 100-500      | 18           | 5500         | 24           | 7700         |
| <b>Total</b> | <b>30</b>    | <b>15700</b> | <b>37</b>    | <b>18000</b> |

1630

| Denmark      |              |              | Sweden       |              |
|--------------|--------------|--------------|--------------|--------------|
| Tonnage      | No. of Ships | Displacement | No. of Ships | Displacement |
| 2001–2500    | 0            | 0            | 0            | 0            |
| 1501–2000    | 0            | 0            | 1            | 1600         |
| 1001–1500    | 4            | 4700         | 1            | 1100         |
| 501–1000     | 11           | 8500         | 12           | 8800         |
| 100–500      | 27           | 7700         | 17           | 5500         |
| <b>Total</b> | <b>42</b>    | <b>20900</b> | <b>31</b>    | <b>17000</b> |

1635

| Denmark      |              |              | Sweden       |              |
|--------------|--------------|--------------|--------------|--------------|
| Tonnage      | No. of Ships | Displacement | No. of Ships | Displacement |
| 2001–2500    | 0            | 0            | 0            | 0            |
| 1501–2000    | 0            | 0            | 3            | 4900         |
| 1001–1500    | 4            | 4700         | 2            | 2500         |
| 501–1000     | 10           | 7600         | 20           | 15300        |
| 100–500      | 26           | 8000         | 29           | 9100         |
| <b>Total</b> | <b>40</b>    | <b>20300</b> | <b>54</b>    | <b>31800</b> |

1640

| Denmark      |              |              | Sweden       |              |
|--------------|--------------|--------------|--------------|--------------|
| Tonnage      | No. of Ships | Displacement | No. of Ships | Displacement |
| 2501–3000    | 0            | 0            | 0            | 0            |
| 2001–2500    | 0            | 0            | 0            | 0            |
| 1501–2000    | 0            | 0            | 3            | 4900         |
| 1001–1500    | 2            | 2400         | 2            | 2500         |
| 501–1000     | 12           | 8700         | 19           | 14400        |
| 100–500      | 20           | 6500         | 19           | 6200         |
| <b>Total</b> | <b>34</b>    | <b>17600</b> | <b>43</b>    | <b>28000</b> |



1645

| Denmark      |              |              | Sweden       |              |
|--------------|--------------|--------------|--------------|--------------|
| Tonnage      | No. of Ships | Displacement | No. of Ships | Displacement |
| 2001-2500    | 0            | 0            | 0            | 0            |
| 1501-2000    | 0            | 0            | 3            | 4900         |
| 1001-1500    | 2            | 2600         | 1            | 1400         |
| 501-1000     | 13           | 8900         | 24           | 18200        |
| 100-500      | 19           | 5600         | 29           | 9500         |
| <b>Total</b> | <b>34</b>    | <b>17100</b> | <b>57</b>    | <b>34000</b> |

1650

| Denmark      |              |              | Sweden       |              |
|--------------|--------------|--------------|--------------|--------------|
| Tonnage      | No. of Ships | Displacement | No. of Ships | Displacement |
| 2501-3000    | 0            | 0            | 0            | 0            |
| 2001-2500    | 0            | 0            | 0            | 0            |
| 1501-2000    | 2            | 3700         | 2            | 3300         |
| 1001-1500    | 4            | 5100         | 1            | 1400         |
| 501-1000     | 13           | 8600         | 22           | 16600        |
| 100-500      | 17           | 5400         | 17           | 6100         |
| <b>Total</b> | <b>36</b>    | <b>22800</b> | <b>42</b>    | <b>27400</b> |



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